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13. ABSTRACT (Maximum 200 words) <p>THE SOUTHERN STUDY AREA (SSA) REPORT INTEGRATES THE STUDY AREA HISTORY, GEOLOGY, AND HYDROLOGY WITH THE RESULTS OF SOIL, SURFACE WATER, GROUND WATER, AIR, BIOTA, AND STRUCTURES INVESTIGATIONS TO DEFINE THE NATURE AND EXTENT OF CONTAMINATION IN THE SOUTHERN PORTION OF RMA.</p> <p>THE SSA INCLUDES ALL OF SECTIONS 11 AND 12 AND PORTIONS OF SECTIONS 1, 2, 3, AND 7. HISTORIC REPORTS INDICATE THAT THE SSA WAS NOT USED FOR THE PRODUCTION OF AGENTS OR PESTICIDES, BUT WAS A DISPOSAL AREA AND BUFFER ZONE. 904 SOIL SAMPLES WERE ANALYZED AS WERE SURFACE WATER SAMPLES AND GROUND WATER SAMPLES FROM NUMEROUS WELLS. ORGANOCHLORINE PESTICIDES AND HG ARE THE MOST COMMONLY DETECTED CONTAMINANTS. THE VOLUME OF POTENTIALLY CONTAMINATED SOIL IS ESTIMATED AT 1.51 MILLION CUBIC YARDS.</p> <p>THIS REPORT IS PRESENTED IN THREE SECTIONS:</p> <p>1. CHARACTERIZATION OF THE STUDY AREA - GEOLOGY, HYDROLOGY, CLIMATE, HISTORY</p>				
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ROCKY MOUNTAIN ARSENAL
**Rocky Mountain Arsenal
Information Center
Commerce City, Colorado**
FINAL
REMEDIAL INVESTIGATION REPORT
VOLUME VI
SOUTHERN STUDY AREA, FIGURES
VERSION 3.3

June 1989
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PREPARED BY

EBASCO SERVICES INCORPORATED
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R.L. STOLLAR AND ASSOCIATES

PREPARED FOR:

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STANDARD ABBREVIATIONS USED IN SOUTHERN STUDY AREA REPORT

1. Analyte Groups

VHO	Volatile halogenated organic compounds
VHC	Volatile hydrocarbon compounds
VAO	Volatile aromatic organic compounds
OSCM	Organosulfur compounds - mustard-agent related
OSCH	Organosulfur compounds - herbicide related
OPHGB	Organophosphorous compounds, GB-agent related
OPHP	Organophosphorous compounds, pesticide related
DBCP	Dibromochloropropane
ONC	Organonitrogen compounds
PAH	Polynuclear aromatic hydrocarbons
SHO	Semivolatile halogenated organic compounds
OCP	Organochlorine pesticides
ICP METALS	Metals analyzed for by inductively coupled argon plasma, includes cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), and zinc (Zn)
As	Arsenic
Hg	Mercury

2. National Acts & Organizations

AMCCOM	Armament, Munitions, and Chemical Command
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CWS	Chemical Warfare Service
DOJ	Department of Justice
DOD	Department of Defense
FDA	Food & Drug Administration
NCP	National Contingency Plan
NIOSH	National Institute of Occupational Health and Safety
SARA	Superfund Amendments and Reauthorization Act
USACOE	United States Army Corps of Engineers
USAEWES	United States Army Engineer Waterways Experiment Station
USATHAMA	United States Army Toxic and Hazardous Materials Agency
USDA-SCS	United States Department of Agriculture - Soil Conservation Service
USEPA	U.S. Environmental Protection Agency
USFWS	United States Fish and Wildlife Service

STANDARD ABBREVIATIONS USED IN SOUTHERN STUDY AREA REPORT
(continued)

3. Local Terminology

BIM	Basic Information Maps
BCF	Bioconcentration Factors
BCRL	Below Certified Reporting Limit
CAR	Contamination Assessment Report
CDH	Colorado Department of Health
CDOW	Colorado Division of Wildlife
CRL	Certified Reporting Limits
EA	Endangerment Assessment
EC	Electrical Conductivity
ESA	Eastern Study Area
FS	Feasibility Study
PMCDIR	Program Manager for Chemical Demilitarization Installation Restoration
PMO or PMRMA	Program Managers Office for the RMA Contamination Cleanup
PWRS	Process Water Return System
RAA	Remedial Action Alternative
RI	Remedial Investigation
RIC	Resource Information Center
RMA	Rocky Mountain Arsenal
RMACCPMT	Rocky Mountain Arsenal Contamination Cleanup Program Managers Team
SAR	Study Area Report
SPF	Standard Project Flood
SPSA	South Plants Study Area
SSA	Southern Study Area
TPP	Technical Program Plan
TSP	Total Suspended Particulates
WSA	Western Study Area

4. Companies

EBASCO	Ebasco Services Incorporated
ESE	Hunter/Environmental Science & Engineering, Inc.
G&M	Geraghty & Miller, Inc.
MKE	Morrison-Knudsen Engineers, Inc.
WRS	Whitman, Requardt & Smith

5. Unified Soil Classification System (USCS) Textural Key

CL	inorganic clay, low plasticity
GC	clayey gravel
GP	poorly graded gravel
ML	inorganic silt, low plasticity
SC	clayey sand
SM	silty sand
SP	poorly graded sand
SW	well graded sand

STANDARD ABBREVIATIONS USED IN SOUTHERN STUDY AREA REPORT
(continued)

6. Measurements

ac ft/mo	acre-foot per month
cm/yr	centimeters per year
f/cc	fibers per cubic centimeter
gpd/ft	gallons per day per foot
mg/kg	milligrams per kilogram, equivalent to parts per million
mg/l	milligrams per liter
msl	mean sea level
ppb	parts per billion
ppm	parts per million
ug/g	micrograms per gram, equivalent to parts per million
ug/l	micrograms per liter, nearly equivalent to parts per billion
umhos/cm	micromhos per centimeter

AA	Atomic Absorption
CVAA	Cold Vapor Atomic Absorption
Eh	Oxidation Potential
f _{oc}	Soil-organic carbon content
GC/EC	Gas chromatography/Electron capture
GC/MS	Gas chromatography - mass spectrography
IL	Indicator Level
K _d	soil-water partition coefficient
K _h	Henry's Law Constant
K _{oc}	organic carbon partition coefficient
K _{ow}	octanol-water partition coefficient
NTU	Nephelometric Turbidity Units
TSP	Total Suspended Particulates

TARGET LIST OF CHEMICAL ANALYTE GROUPS AND ANALYTES

1) Volatile Halogenated Organics (VHOs)

Methylene Chloride

Chloroform

Carbon Tetrachloride

1,1-Dichloroethane

1,2-Dichloroethane

1,1,1-Trichloroethane

1,1,2-Trichloroethane

1,1,2,2-Tetrachloroethane*

1,1-Dichloroethylene

T-1,2-Dichloroethylene

Trichloroethylene

Tetrachloroethylene

Chlorobenzene

Trichloropropene*

2) Volatile Hydrocarbons (VHCs)

Dicyclopentadiene

Bicycloheptadiene

1-Methyl-1,3-cyclopentadiene*

Methylcyclohexane*

Methylisobutyl Ketone

4-Hydroxy-4-methyl-2-pentanone*

2-Pentanone*

2-Butoxyethanol*

2,2-Oxybisethanol*

3) Volatile Aromatic Organic Compounds (VAOs)

Benzene

Toluene

m-Xylene

o- and p-Xylene

Ethylbenzene

4) Organosulfur Compounds, Mustard-Agent Related (OSCMs)

1,4-Oxathiane

Dithiane

Thiodiglycol

Chloroacetic Acid

*Formerly a significant nontarget compound

TARGET LIST OF CHEMICAL ANALYTE GROUPS AND ANALYTES
(continued)

5) Organosulfur Compounds, Herbicide Related (OSCHs)

Chlorophenylmethyl sulfide
Chlorophenylmethyl sulfone
Chlorophenylmethyl sulfoxide
Dimethyl disulfide
Benzothiazole

6) Organophosphorous Compounds, GB-Agent Related (OPHGBs)

Diisopropylmethyl phosphonate
Dimethylmethyl phosphonate
Phosphoric acid, tributyl ester*
Phosphoric acid, triphenyl ester*
Isopropylmethylphosphonic acid
Methylphosphonic acid

7) Organophosphorous Compounds, Herbicide Related (OPHPs)

Atrazine
Malathion
Parathion
Supona
Vapona

8) Dibromochloropropane (DBCP)

9) Organonitrogen Compounds (ONCs)

Nitrosodimethylamine
Nitrosodi-n-propylamine
Hydrazine
Methylhydrazine
Unsymmetrical dimethylhydrazine
Caprolactam*

10) Fluoroacetic Acid

11) Polynuclear Aromatic Hydrocarbons (PAHs)

Fluoranthene*
Methylnaphthalene*
Phenanthrene*
Pyrene*

* Formerly a significant nontarget compound

TARGET LIST OF CHEMICAL ANALYTE GROUPS AND ANALYTES
(continued)

12) Semivolatile Halogenated Organic Compounds (SHOs)

Trichlorobenzene*
Hexachlorobenzene*
Hexachlorobutadiene*
Hexachlorocyclopentadiene
Pentachlorobenzene*
Tetrachlorobenzene*

13) Organochlorine Pesticides (OCPs)

Aldrin
Dieldrin
Endrin
Isodrin
Dichlorodiphenylethane
Dichlorodiphenyltrichloroethane
Chlordane

14) Arsenic

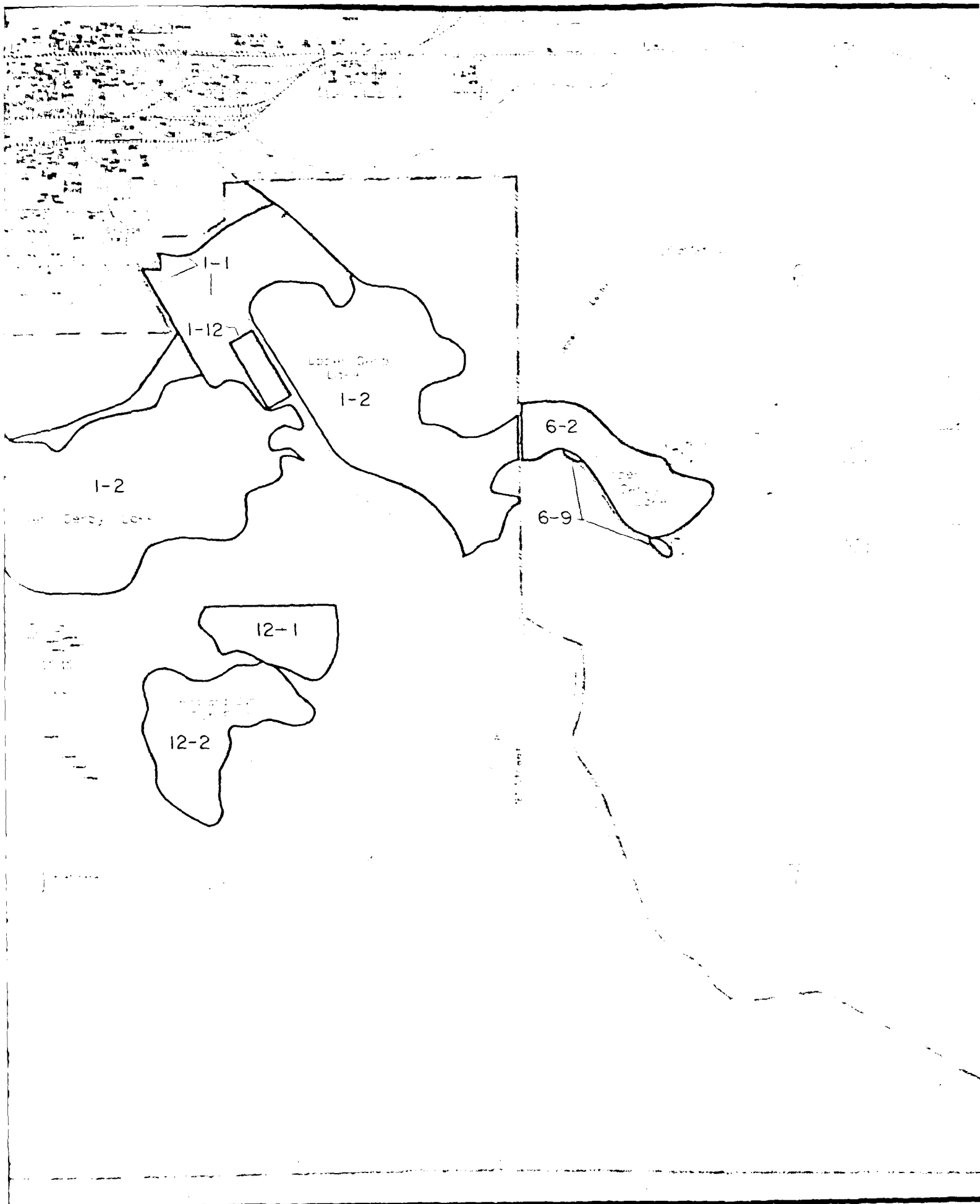
15) Mercury

16) ICP Metals (ICPs)

Cadmium
Chromium
Copper
Lead
Zinc

*Formerly a significant nontarget compound



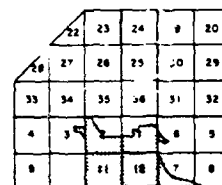




LEGEND

- Improved Road
- - - - - Unimproved Road
- + + + + + Railroad Tracks
- Existing Structure
- Former Structure
- - - - - Fence
- 6** Section Number
- ~ Stream or Ditch
- - - - - Study Area Boundary
- 174,000 State Plane Grid
- 6-1** Site Boundary and Number

ROCKY MOUNTAIN ARSENAL
LOCATION



1" = 5 MILES

0 500 1000

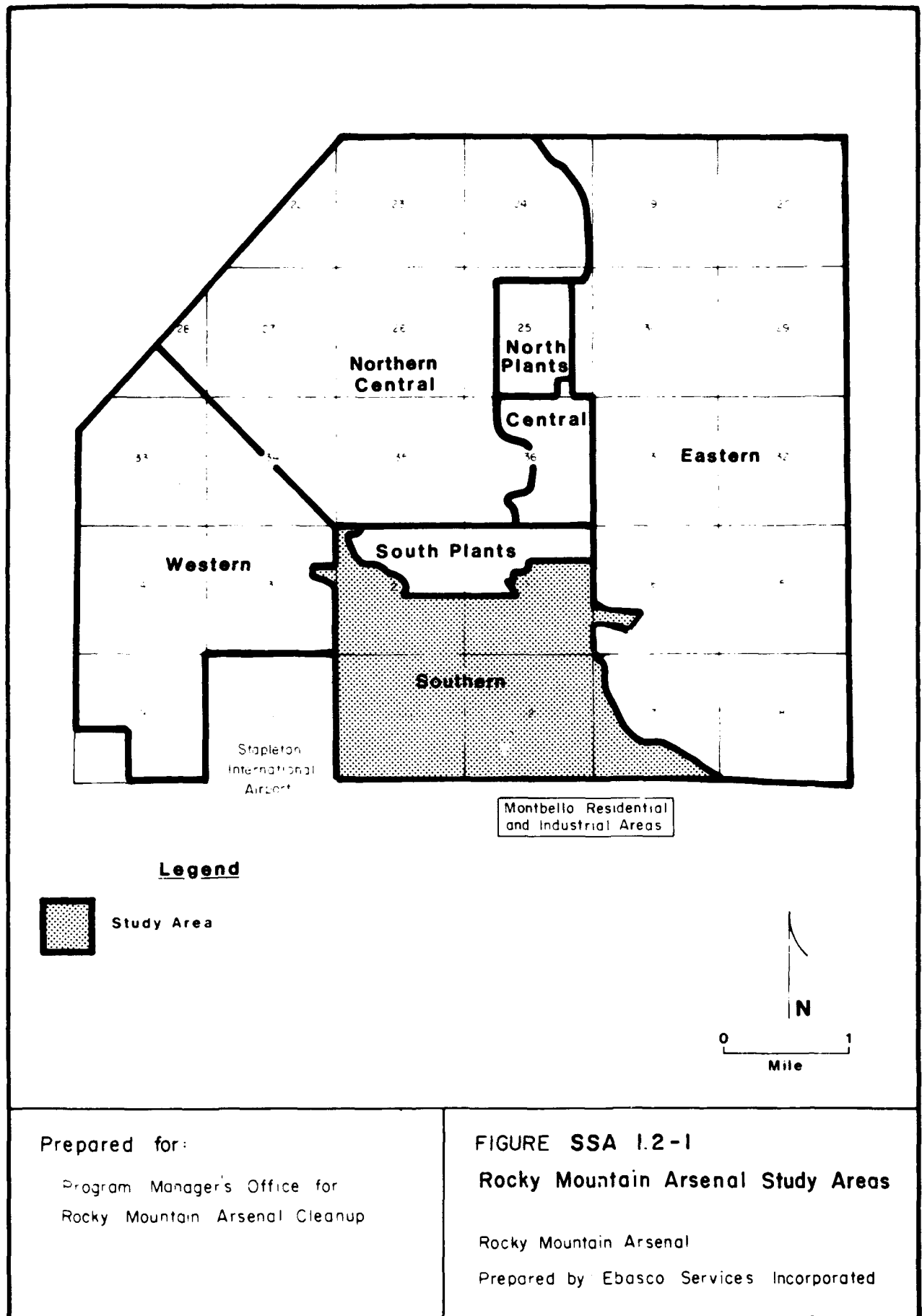
SCALE: 1" = 1000'

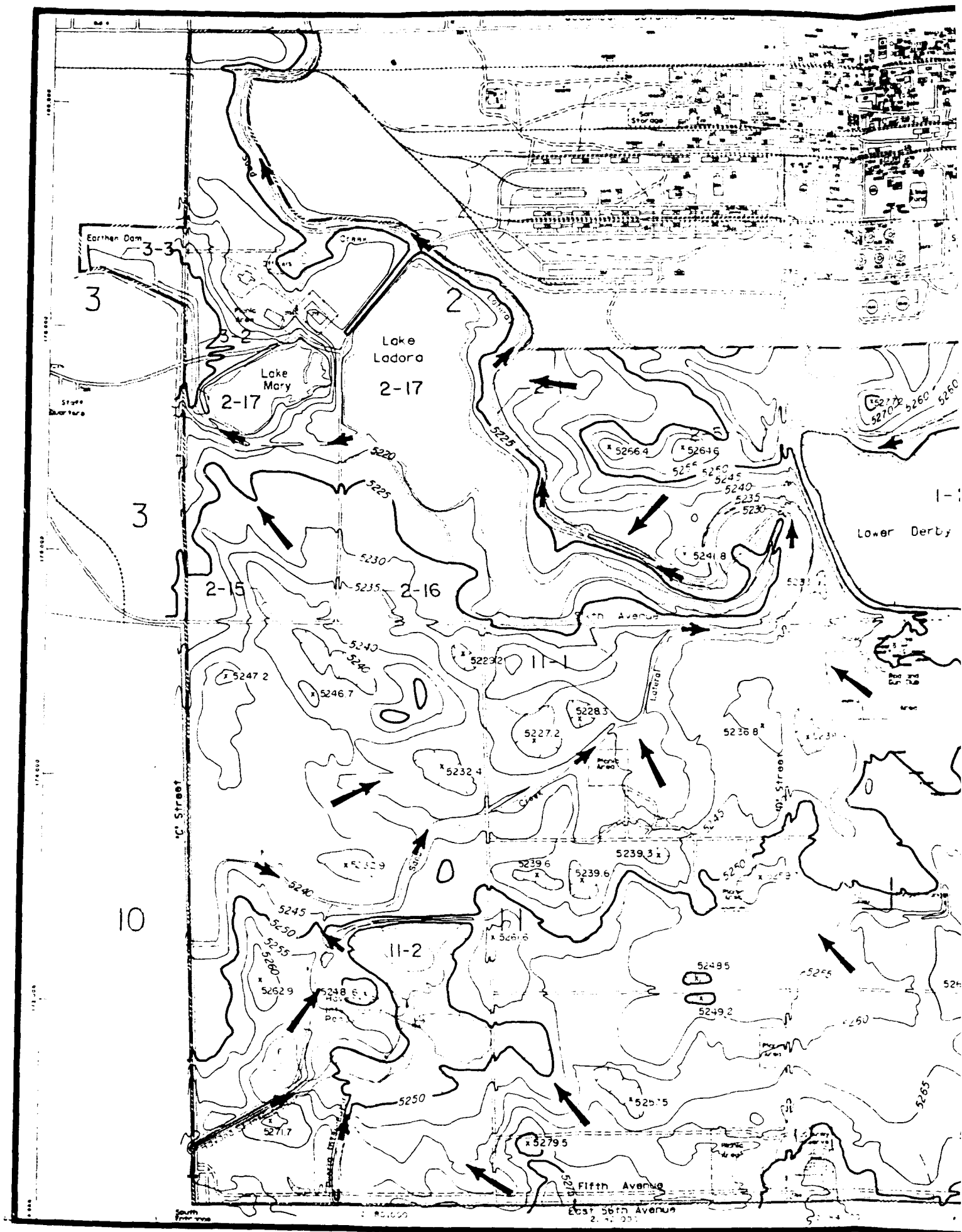
Source: RMACC PMT, 1984

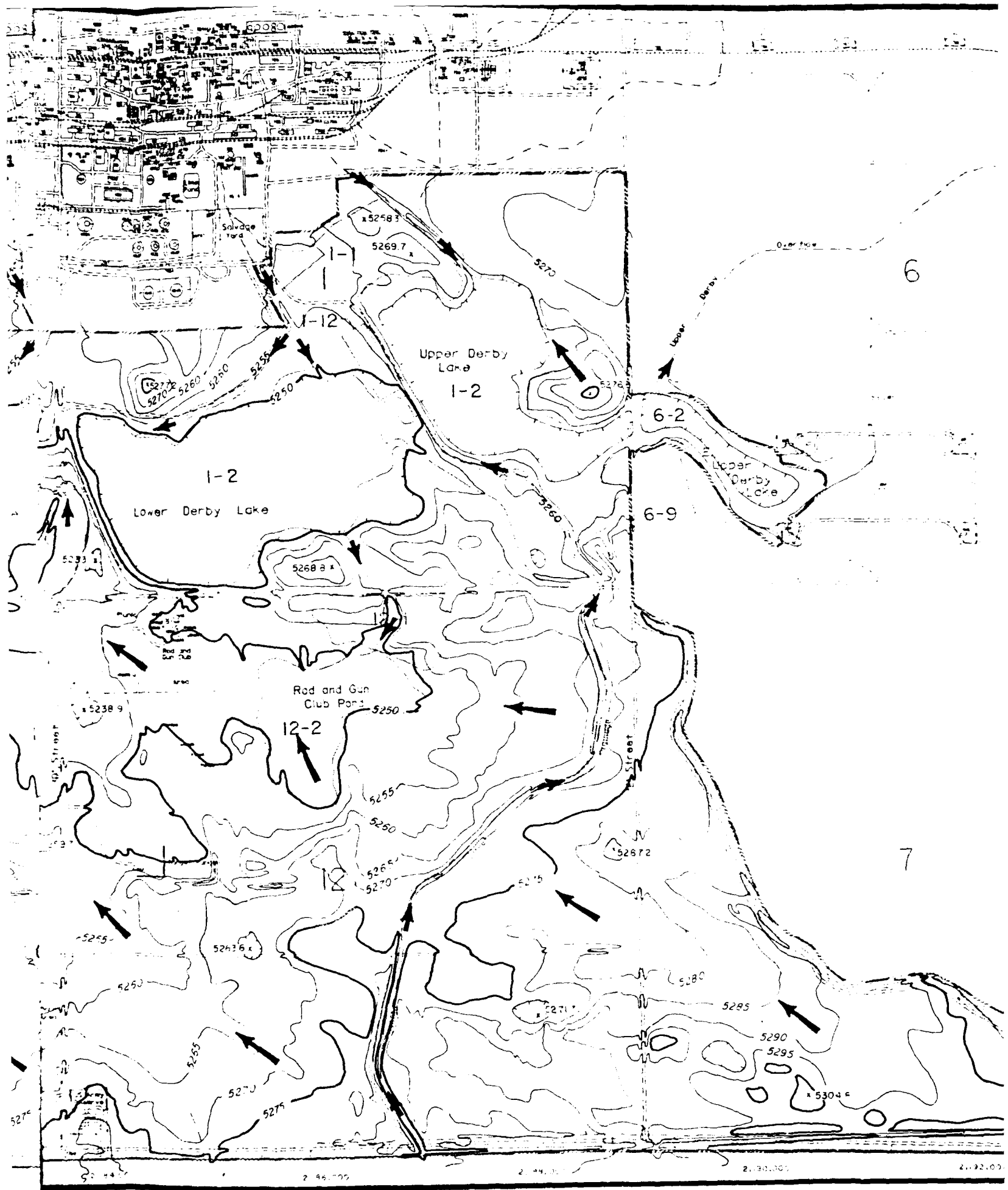
Prepared for:

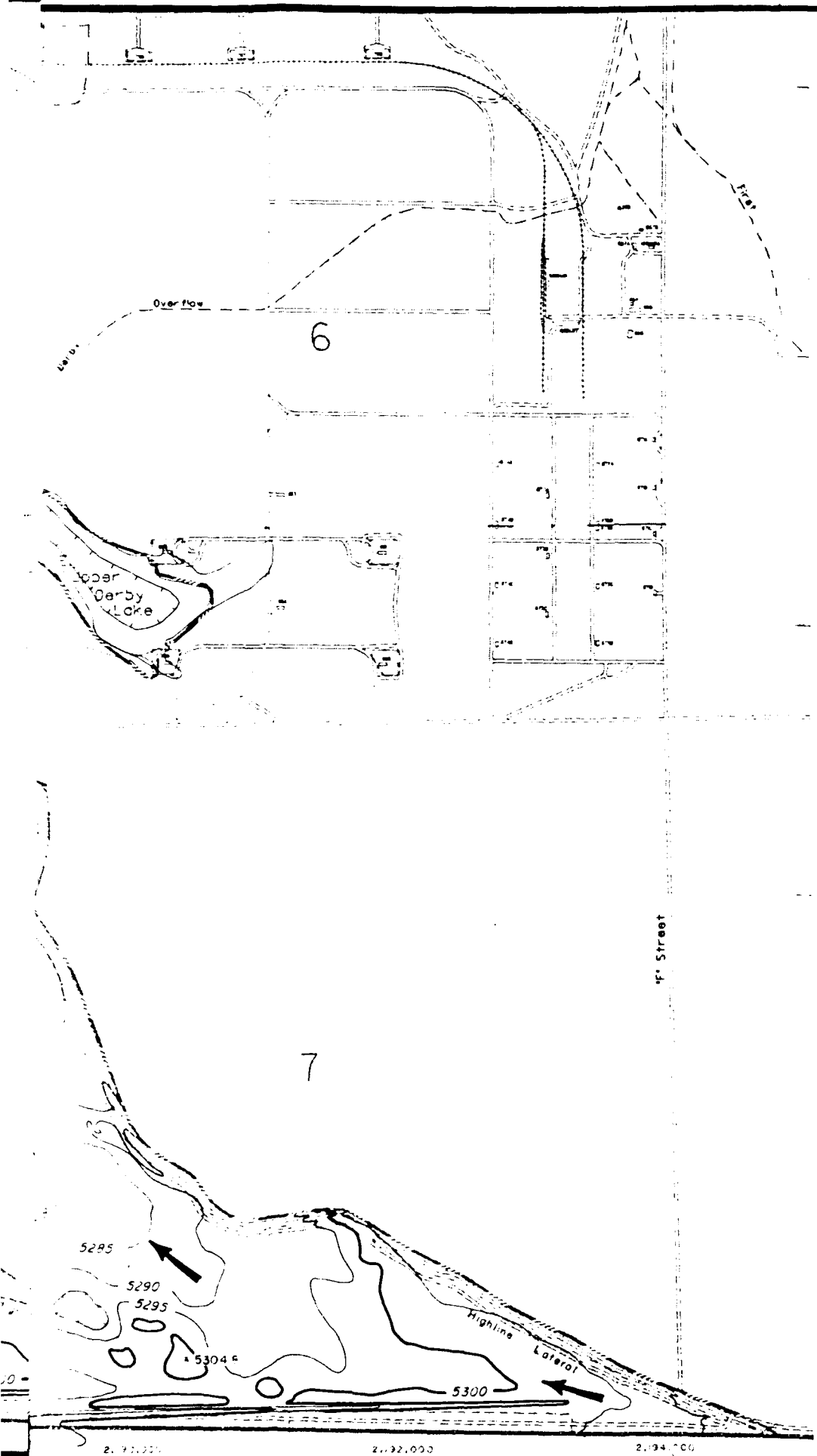
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.1-1
Southern Study Area
Vicinity Map
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated









LEGEND

- Improved Road
- - - - - Unimproved Road
- +—+— Railroad Tracks
- Existing Structure
- - - - - Former Structure
- - - - - Fence
- 6** Section Number
- - - - - Stream or Ditch
- - - - - Study Area Boundary

174,000 State Plane Grid

5290 Index Contour

5295 Intermediate Contour

○ Depression Contour

x 52032 Spot Elevation

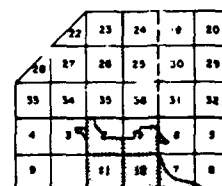
➔ General Surface Flow Direction

➔ Channelled Flow Direction

All Elevations in Feet Above Mean Sea Level

5 FEET CONTOUR INTERVAL

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

0 500 1000

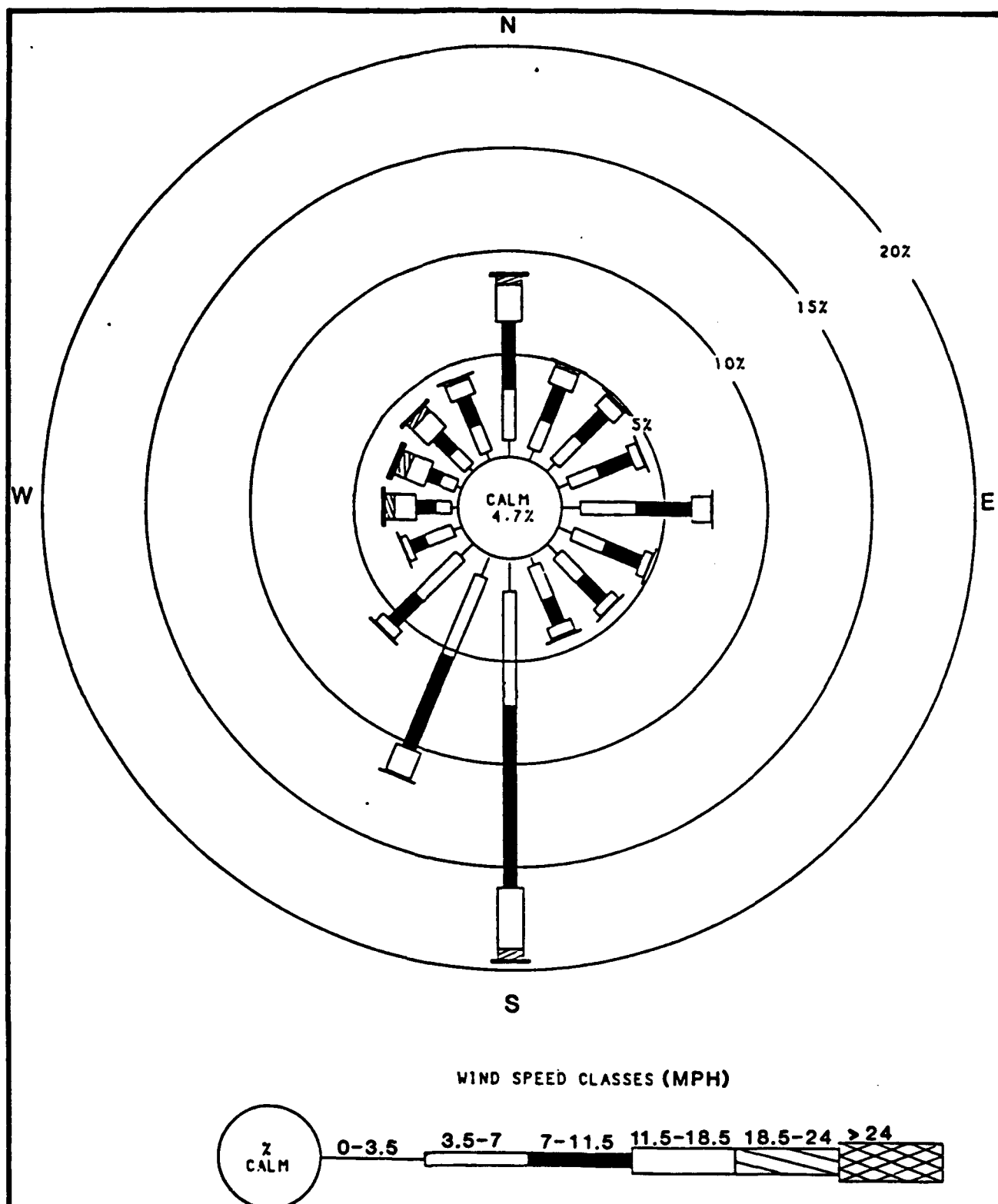
SCALE: 1" = 1000'

Source: Geonex Delta Aerial Survey Inc., 1989

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.2-2
Topography and Drainage Features
of the Southern Study Area
Rocky Mountain Arsenal,
Prepared by:
Ebasco Services Incorporated



Source: Air Remedial Investigation Report. ESE, 1988.

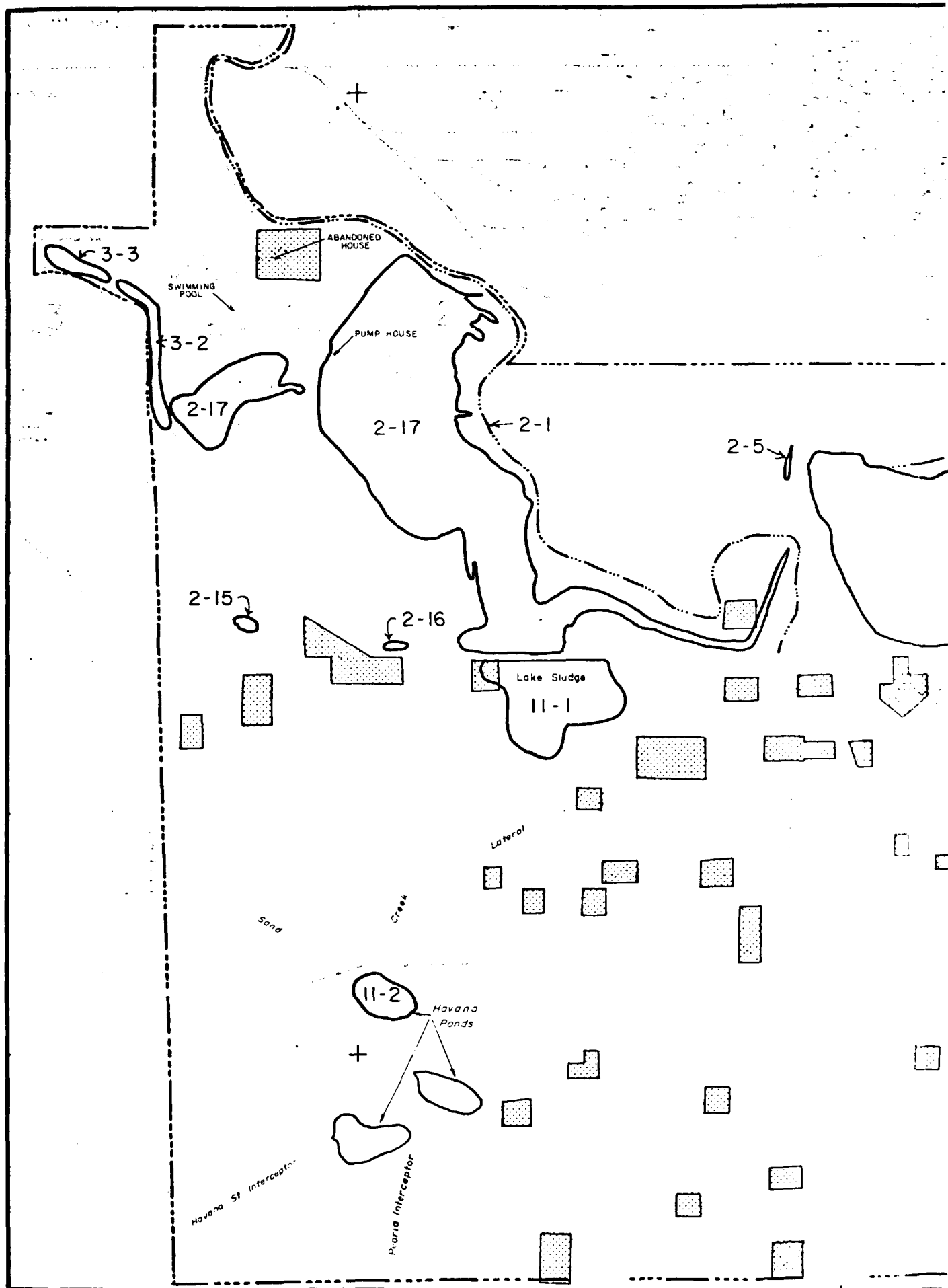
Prepared for:

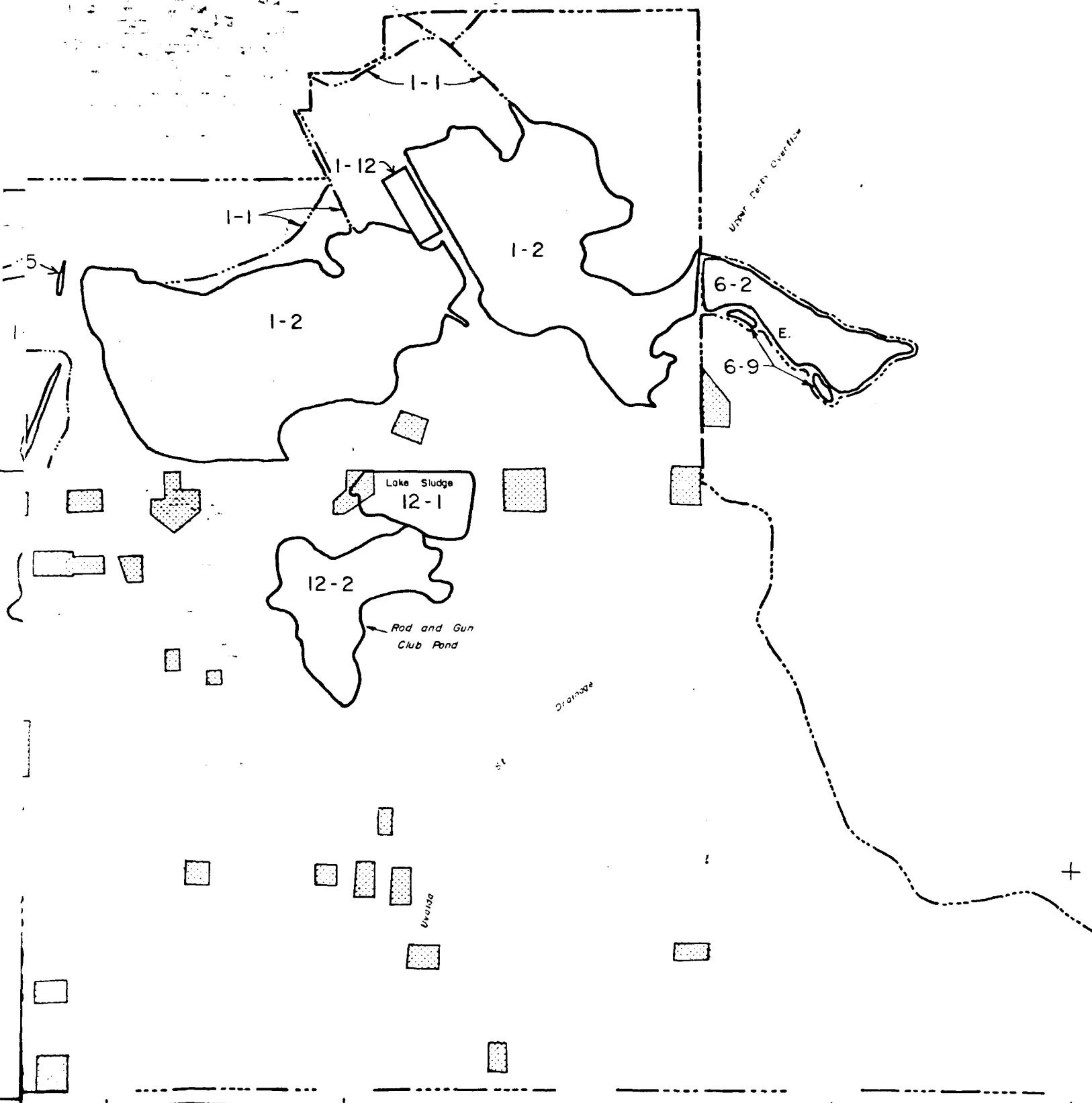
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.2-3

Annual Wind Rose for RMA Vicinity
(Stapleton International Airport 1975-1979)

Rocky Mountain Arsenal
Prepared by: Ebasco Services Incorporated





+



Legend

Improved Road

Unimproved Road

Railroad Tracks

543 Existing Structure

Former Structure

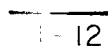
Fence

Section Number

Stream or Ditch



Study Area Boundary



Site Boundary and Number

178,000

State Plane Grid



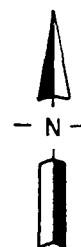
Homestead

NOTE: Adapted from MKE, 1985

ROCKY MOUNTAIN ARSENAL LOCATION

		22	23	24	19	20
28	27	26	25	30	29	
33	34	35	36	31	32	
4	3	2	1	6	5	
9		11	12	7	8	

1" = 4 MILES



Prepared for :

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA I.3-1

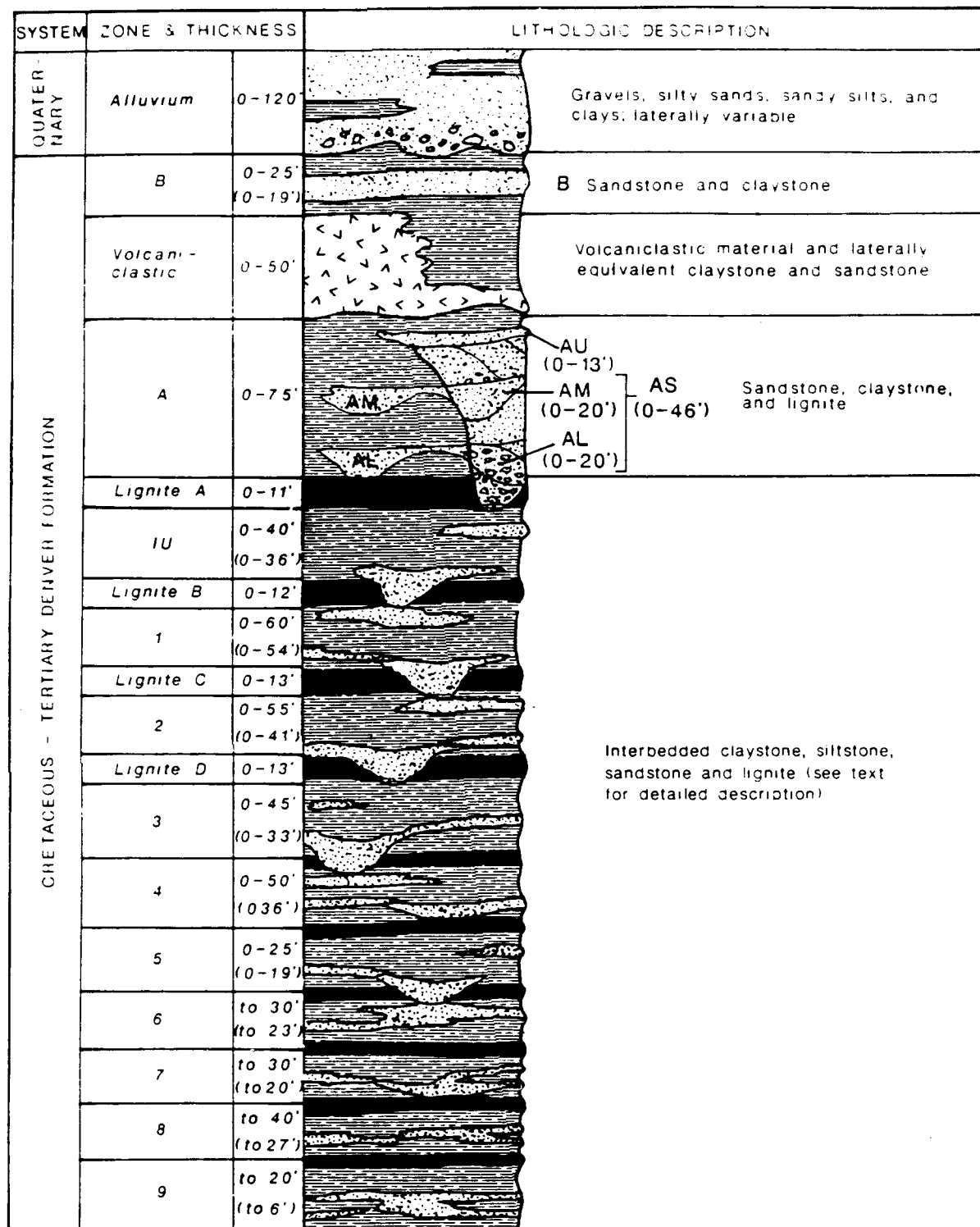
1937 Cultural Features Map

Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated

+

Highline
Lateral



Note: Thickness not to scale, net sandstone thickness shown in parentheses.

Sources: HLA, ESE

Prepared for:

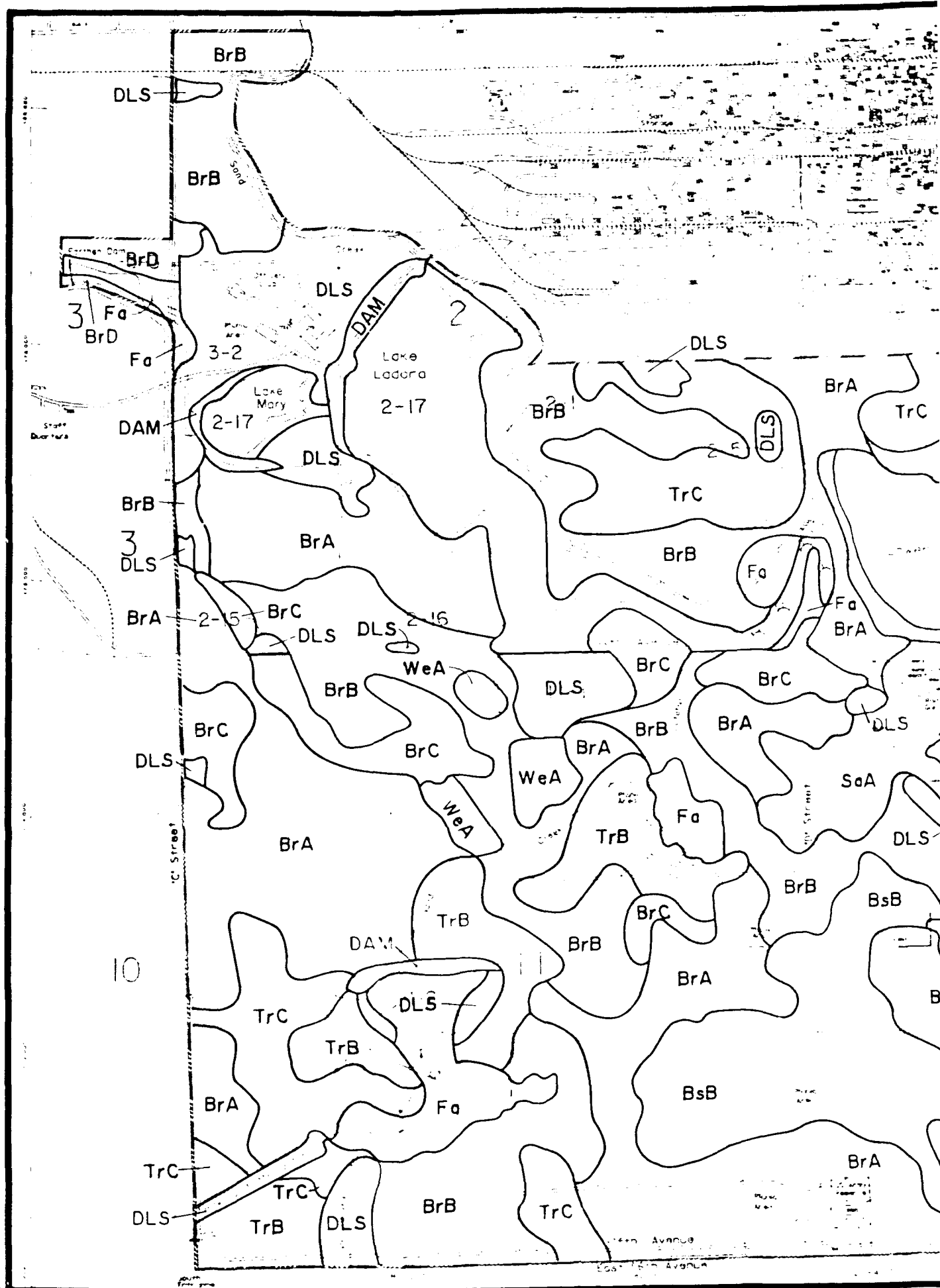
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

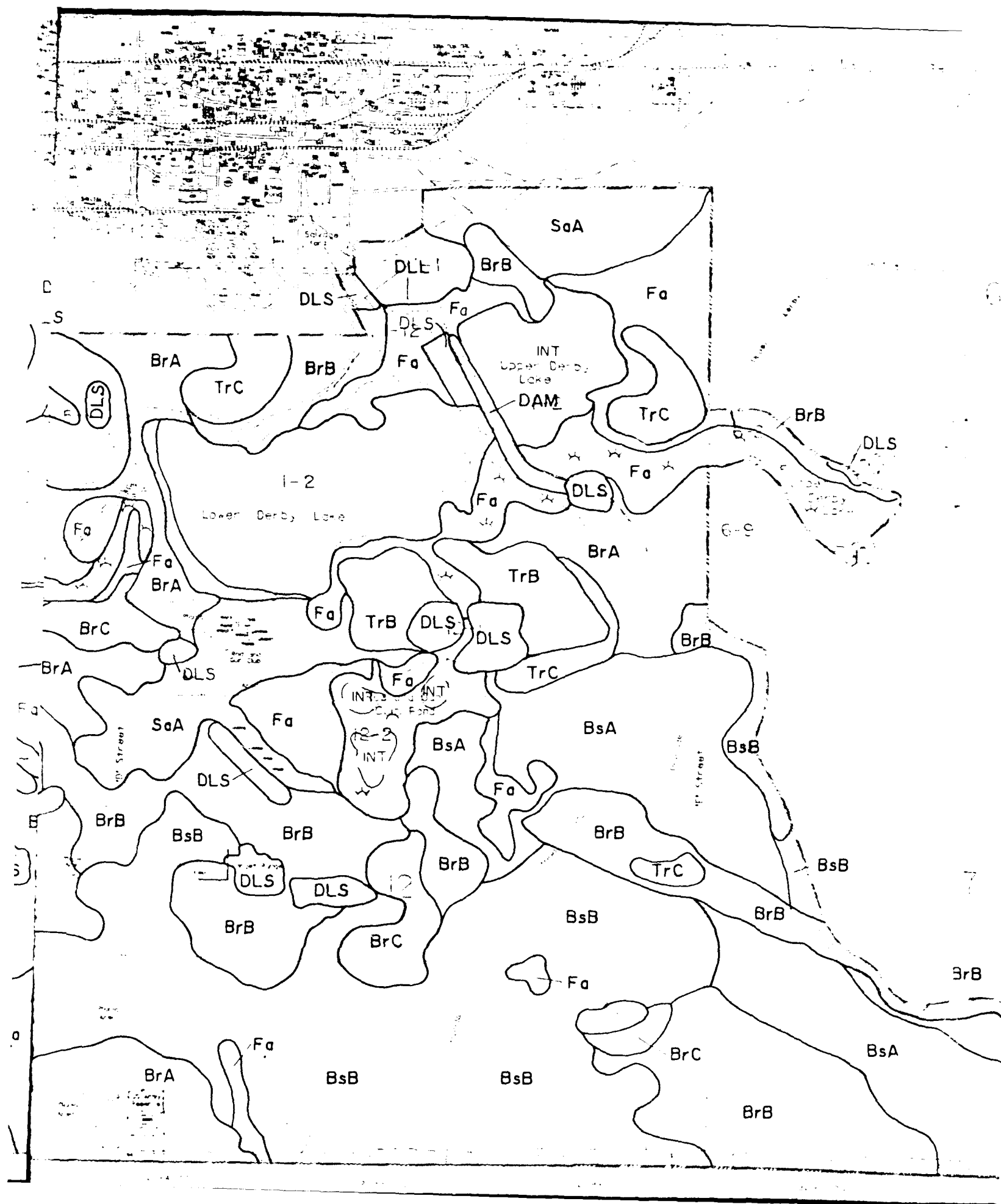
FIGURE SSA 1.4-1

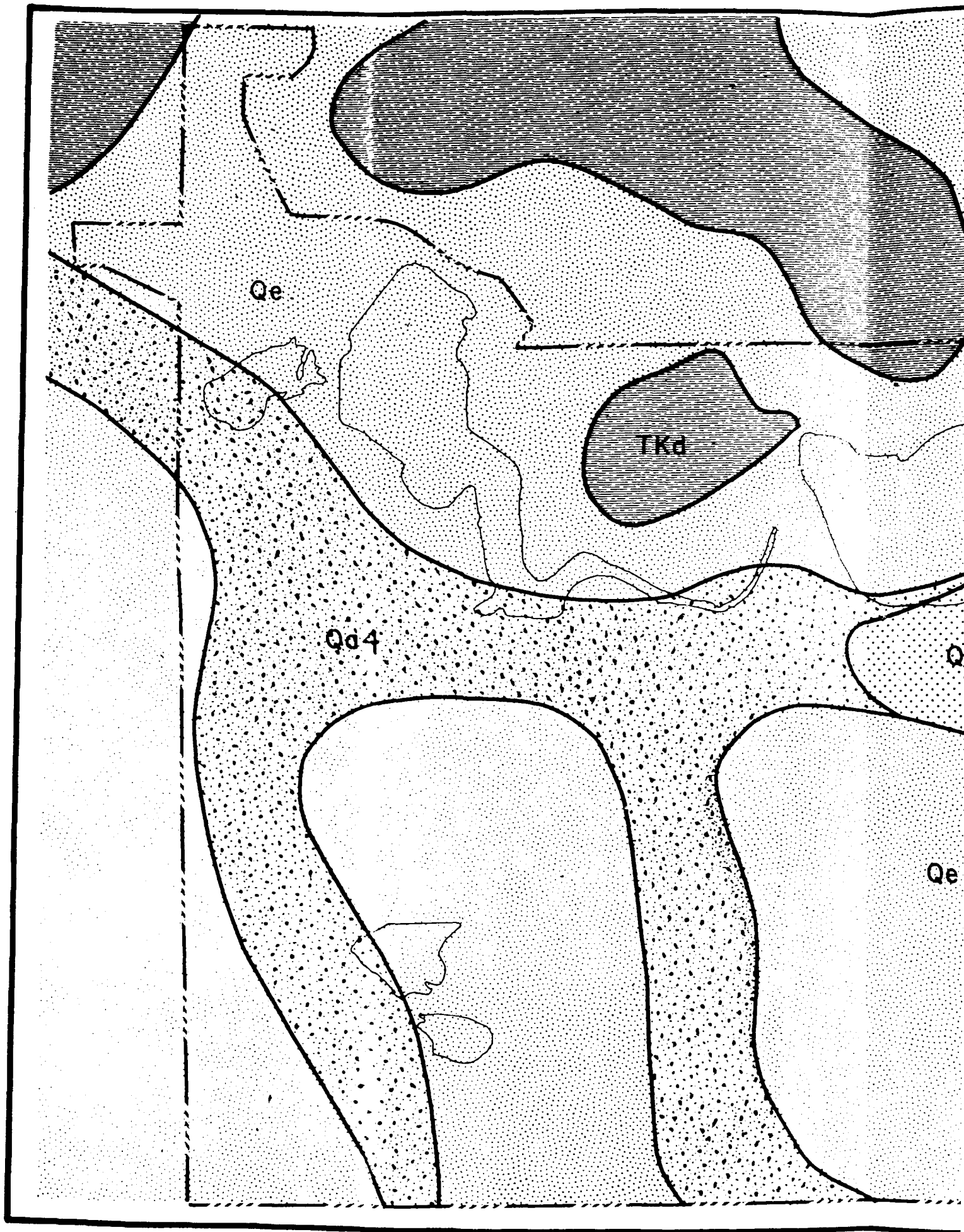
Stratigraphic Column of
Rocky Mountain Arsenal

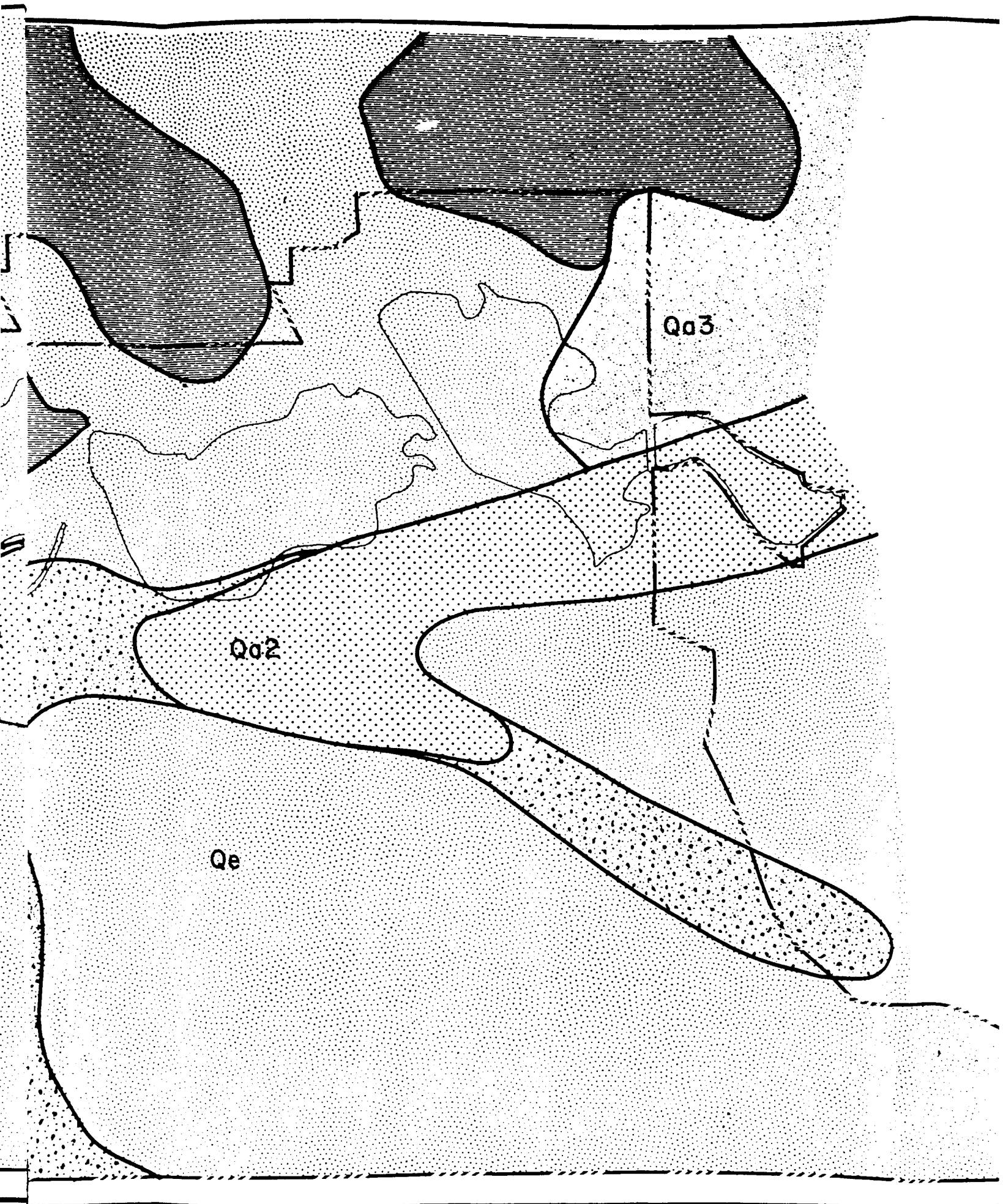
Rocky Mountain Arsenal

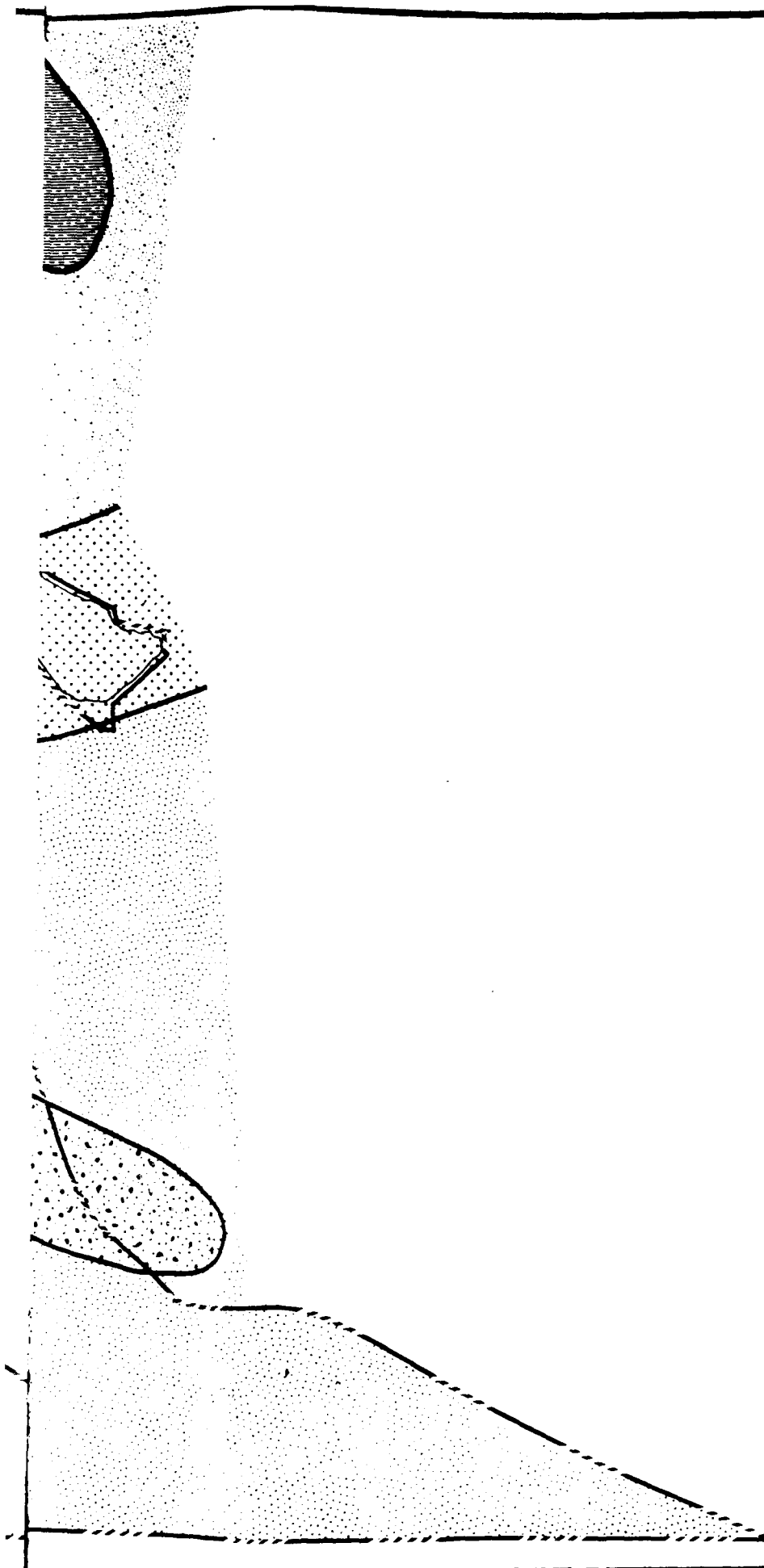
Prepared by: Ebasco Services Incorporated














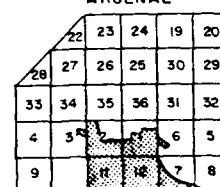


Legend

Study Area Boundary

-  **Qa2** Paleochannels in Eolian (W/Gravel)
-  **Qa3** Silty Terrace Gravel and Coarse Sand
-  **Qa4** Paleochannels in Eolian (W/O Gravel)
-  **Qe** Eolian Deposits
-  **TKd** Denver Fm/Dry Alluvium

ROCKY MOUNTAIN ARSENAL



1" = 5 MILES

0 500 1000

SCALE: 1" = 1000'

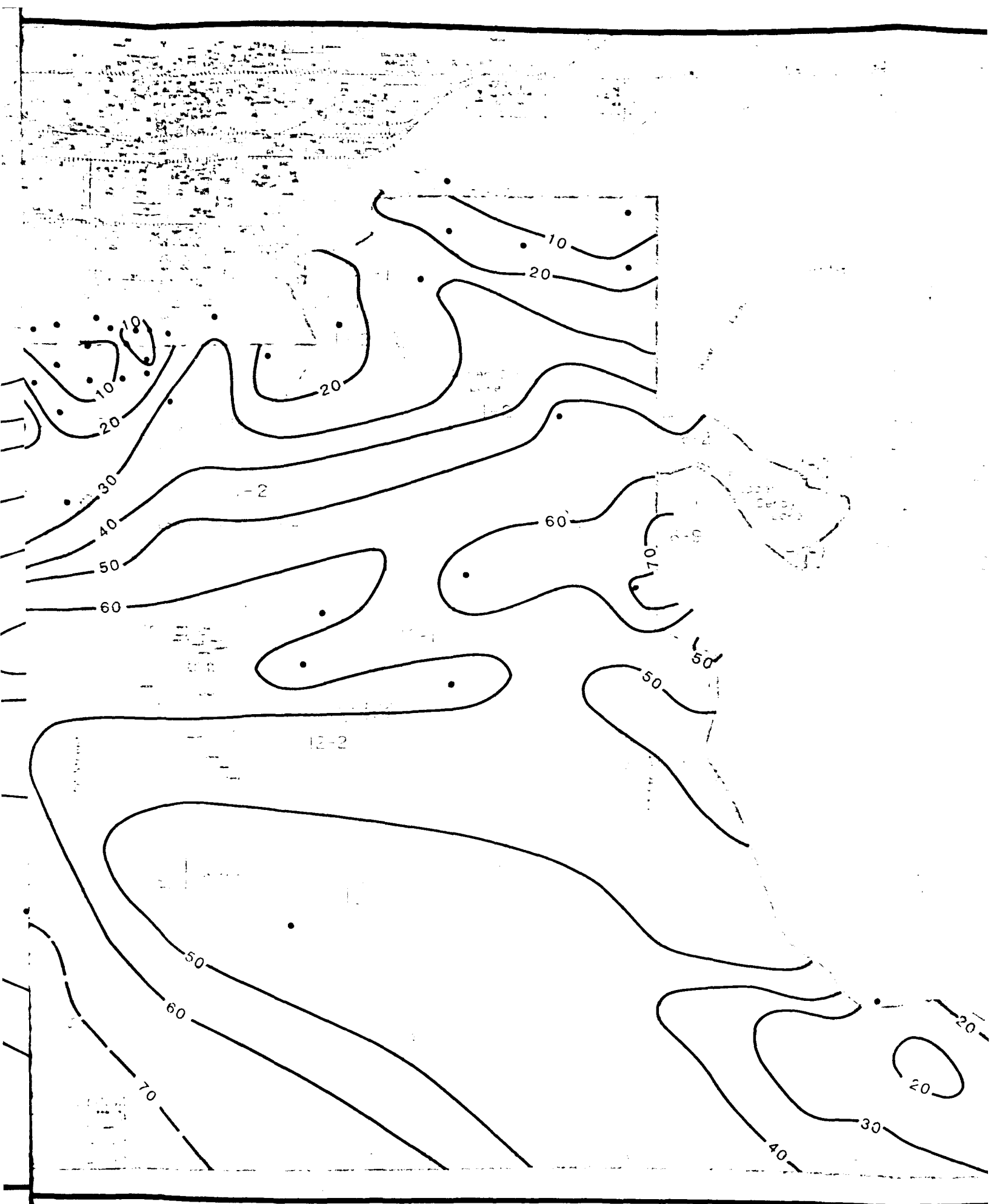
Source: Water Remedial Investigation Report, 1989.

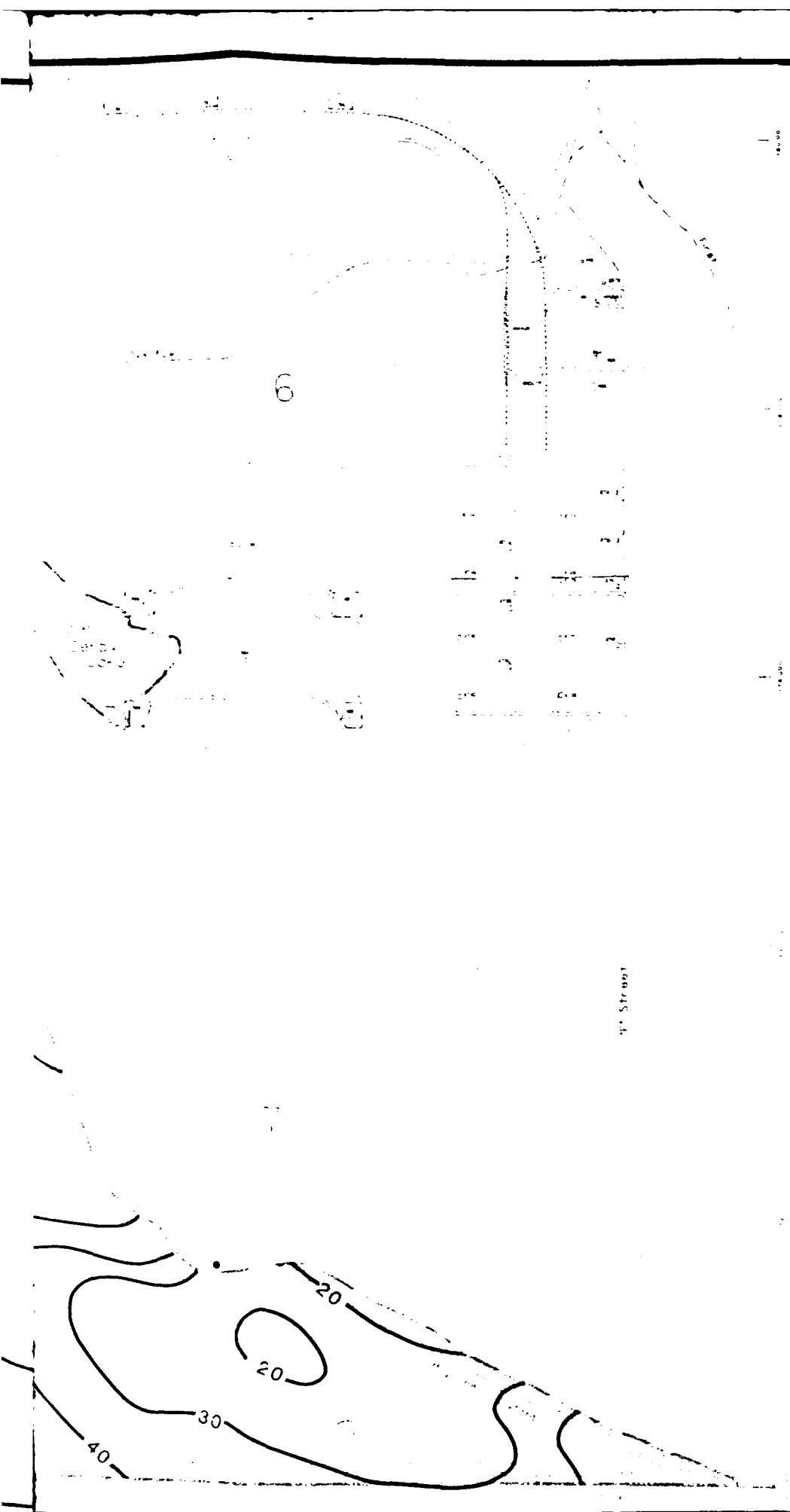
Prepared for:

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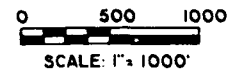
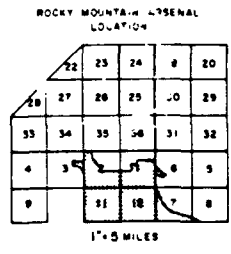
FIGURE: SSA 1.4-3
Alluvial Units - Southern Study
Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





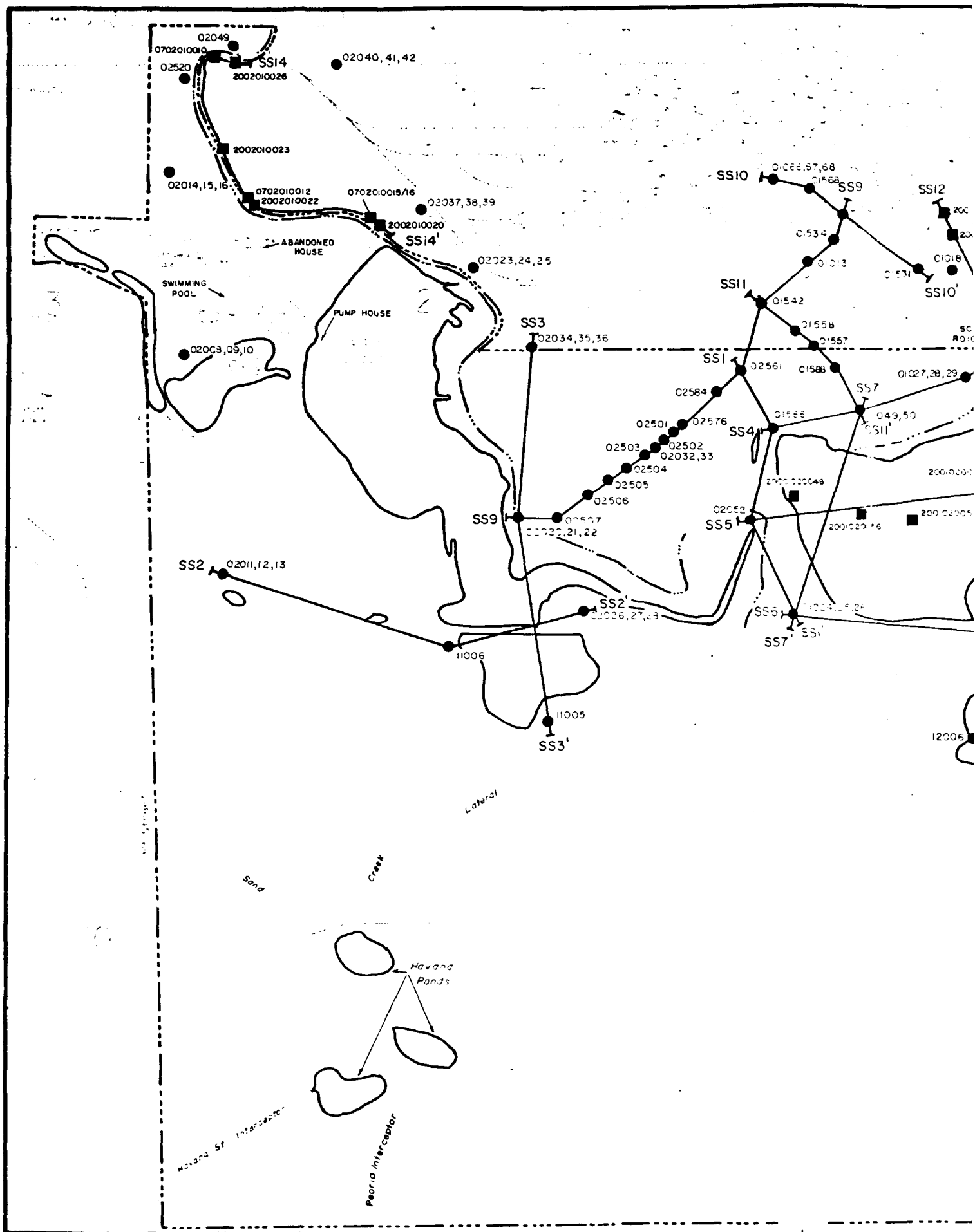


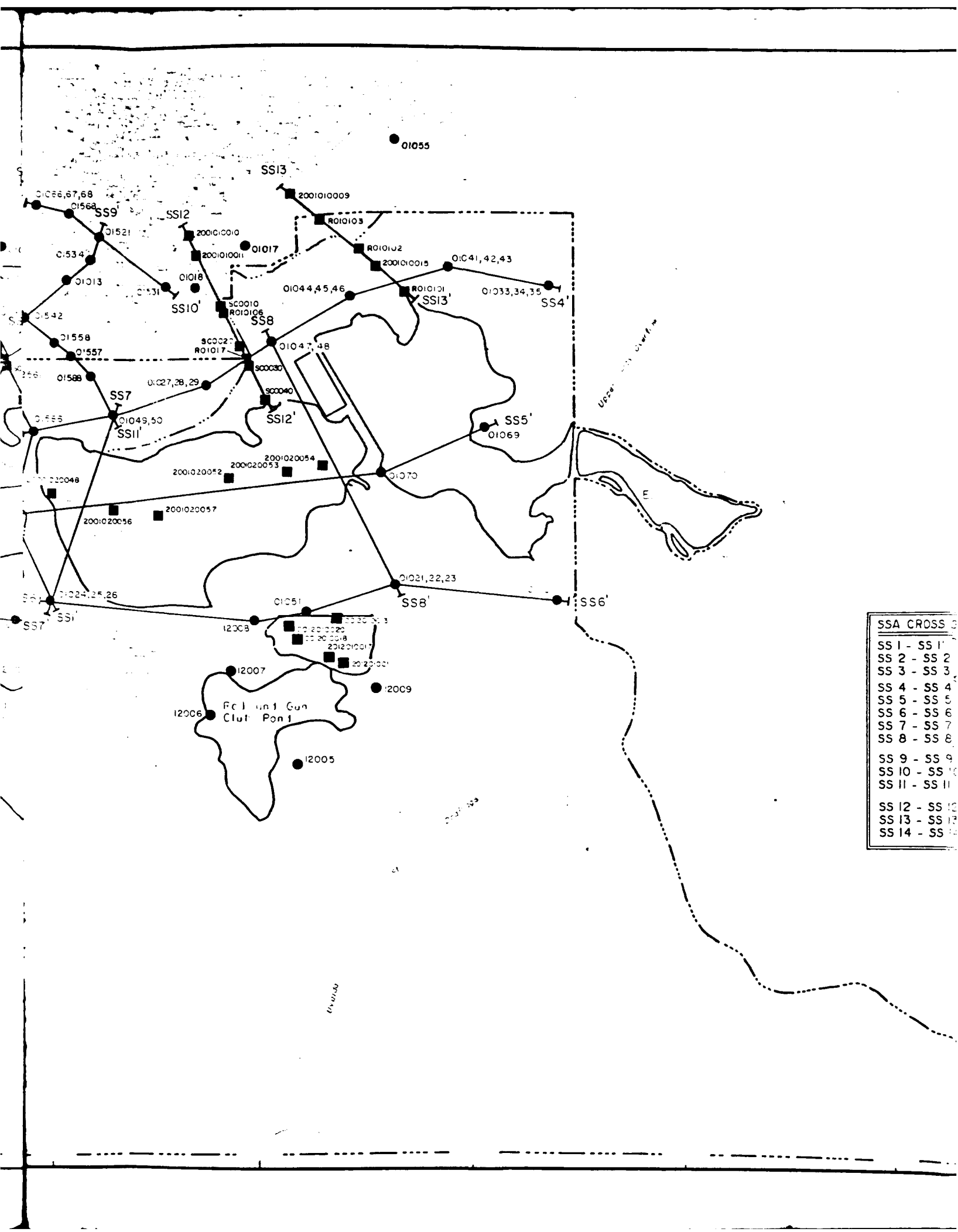
- LEGEND**
- Improved Road
 - Unimproved Road
 - Railroad Tracks
 - Existing Structure
 - Former Structure
 - Fence
 - 6** Section Number
 - Stream or Ditch
 - Study Area Boundary
 - 174,000 State Plane Grid
 - 10 ft. Contour Interval
Alluvial Contour
Dashed where Inferred
 - Control Point



Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.4-4
Alluvial Isopach Map
Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- 743 Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch



Study Area Boundary

01027,28,29

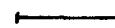
Well Cluster

01017

Single Well Location

2001010015

Boring Location



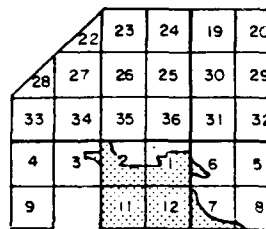
Cross Section Reference

178,000

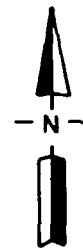
State Plane Grid

Note: See individual cross section for complete numerical description.

ROCKY MOUNTAIN ARSENAL
LOCATION



1" = 4 MILES



SSA CROSS SECTIONS	PLATE
SS 1 - SS 1'	SSA I.4-1
SS 2 - SS 2'	
SS 3 - SS 3'	
SS 4 - SS 4'	SSA I.4-2
SS 5 - SS 5'	
SS 6 - SS 6'	
SS 7 - SS 7'	
SS 8 - SS 8'	SSA I.4-3
SS 9 - SS 9'	
SS 10 - SS 10'	
SS 11 - SS 11'	
SS 12 - SS 12'	SSA I.4-4
SS 13 - SS 13'	
SS 14 - SS 14'	

Prepared for :

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

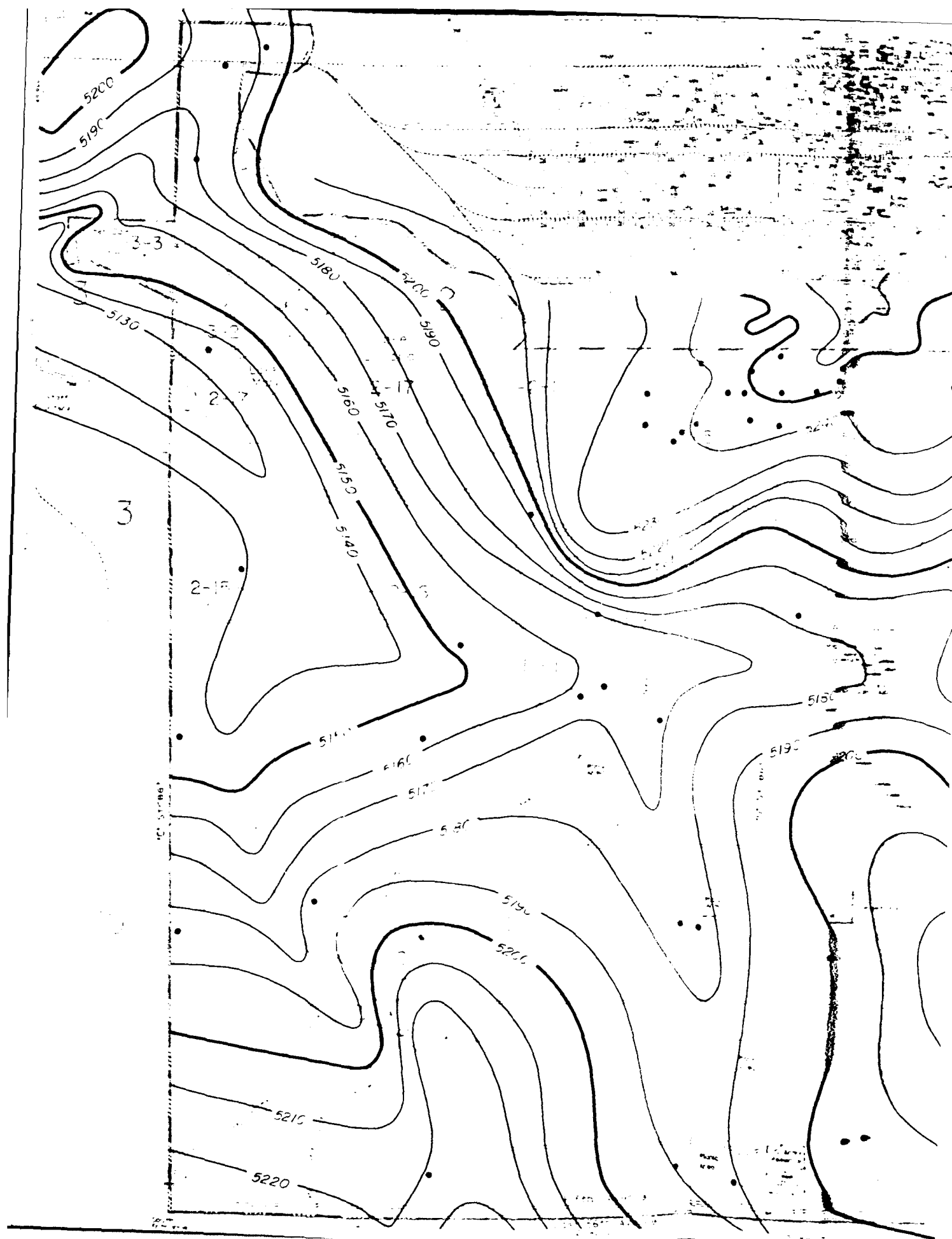
FIGURE SSA I.4-5

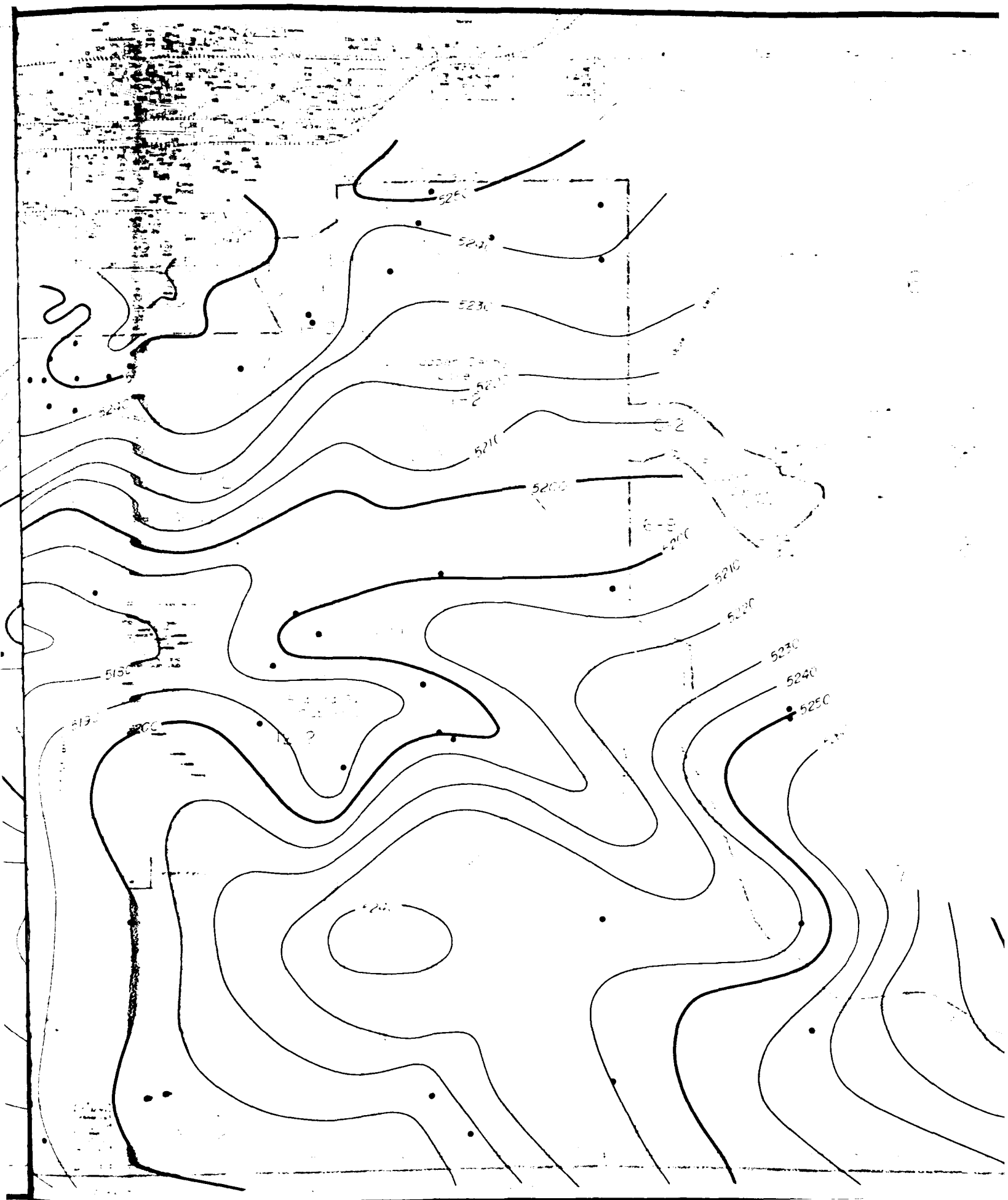
Master Cross Section Map

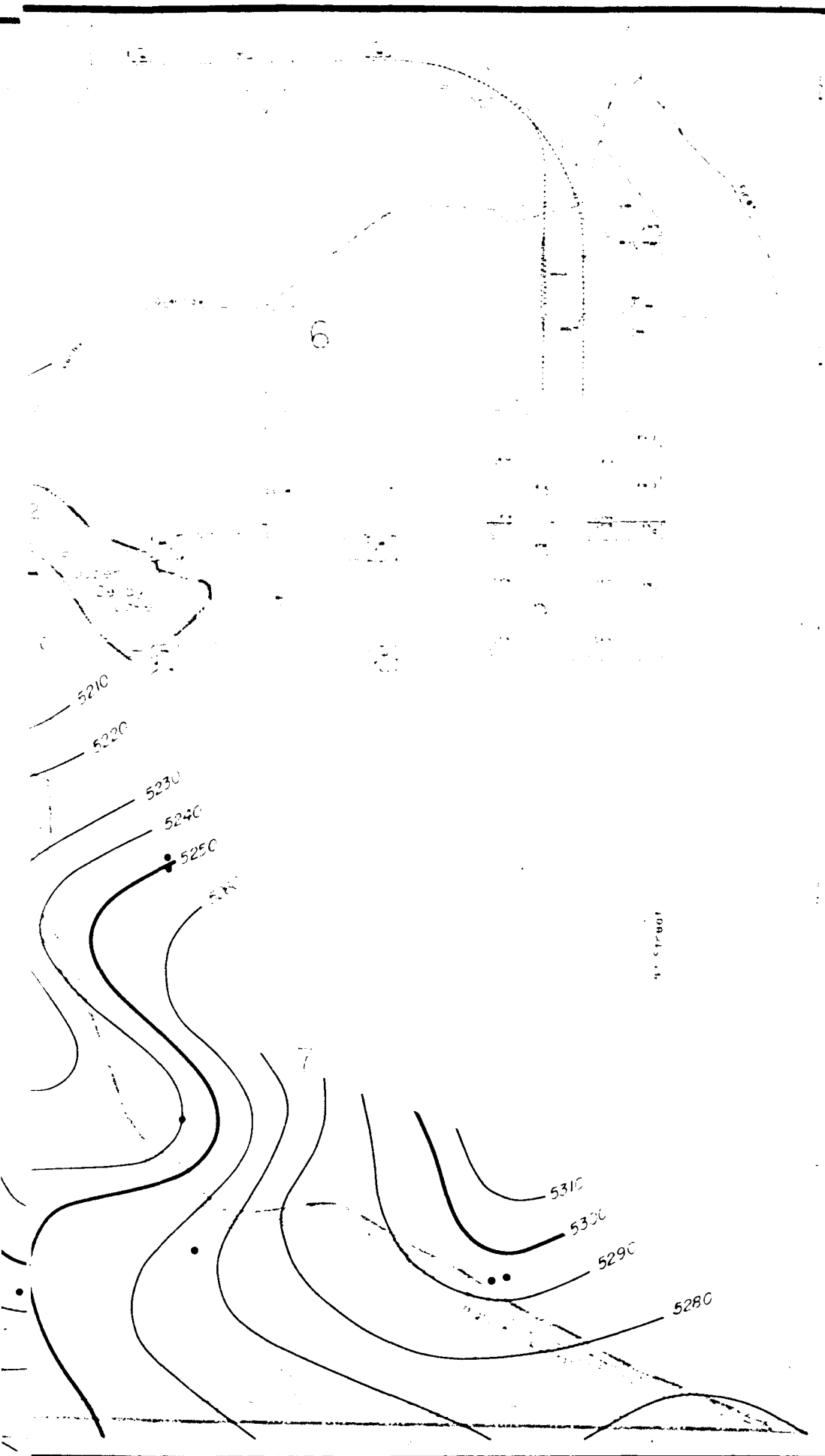
Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated

Highline
Lateral







LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

5210 Contour & Elevation in feet above M.S.L.

• Data Control Point

Contour Interval is 10 feet

ROCKY MOUNTAIN ARSENAL
LOCATION

	22	23	24	25	26	27	28	29	30	31	32
28	27	26	25	24	23	22	21	20	19	18	17
33	34	35	36	37	38	39	40	41	42	43	44
4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27

1" = 5 MILES

0 500 1000

SCALE: 1" = 1000'

Prepared for:

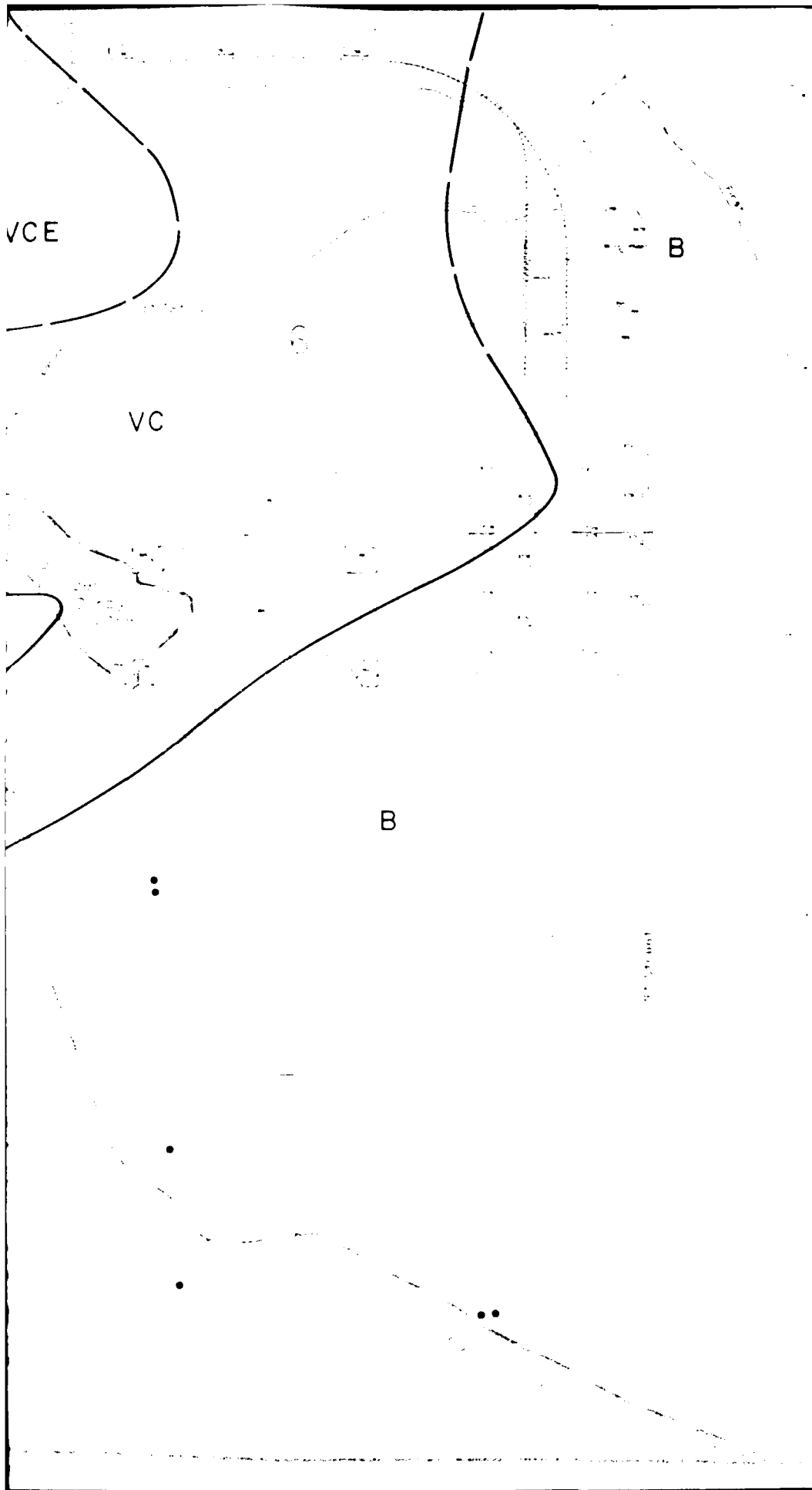
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.4-6
Bedrock Elevation in the
Southern Study Area
Rocky Mountain Arsenal

Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- - - - - Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid
- Control Point

STRATIGRAPHIC COLUMN

- VC- Volcaniclastic material
- VCE- Clay-rich stratigraphic equivalent to VC
- A- Zone A
- LA- Lignite A
- Iu- Zone Iu
- B- Zone B

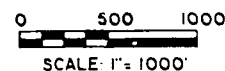
- Sandstone Subcrop dashed where inferred
- Denver Contact with Alluvium dashed where Inferred

Source: Water Remedial Investigation Report

ROCKY MOUNTAIN ARSENAL LOCATION



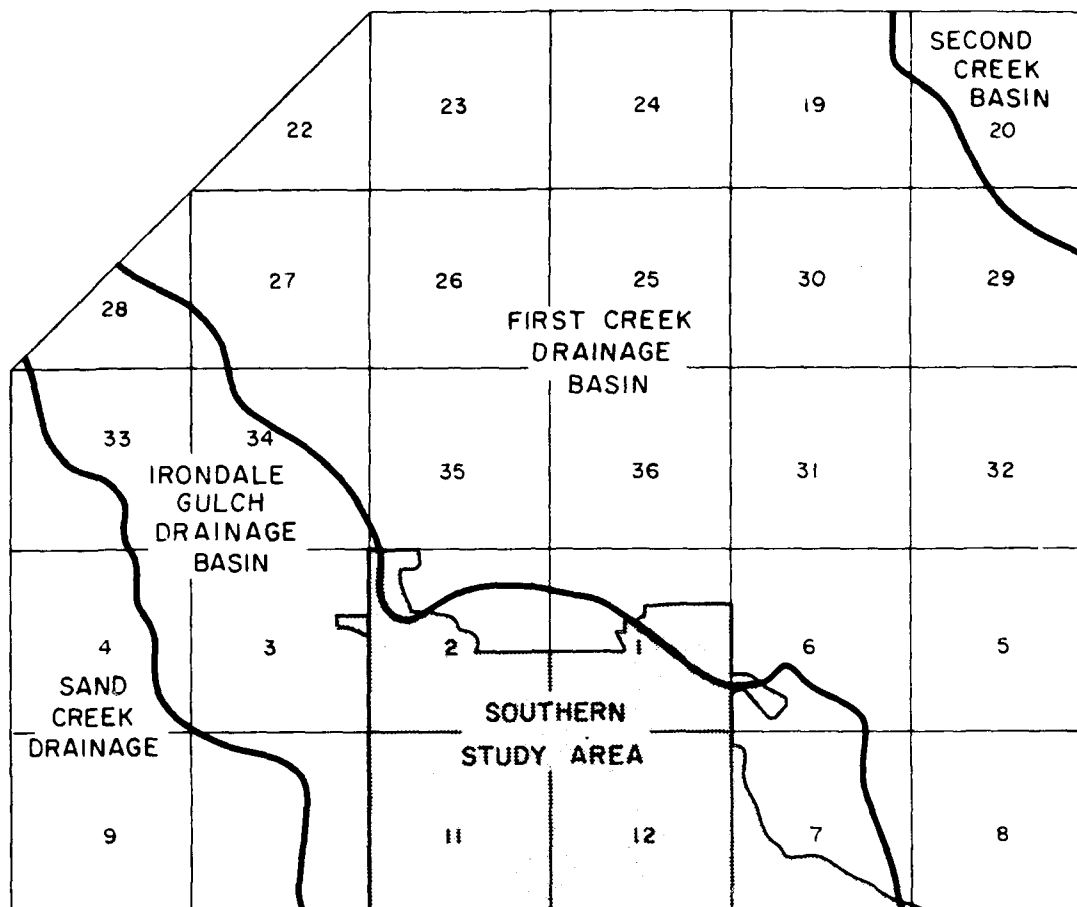
1" = 5 MILES



Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.4-7
Denver Formation Subcrop Map
Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



Source: Water Remedial Investigation Report, 1989

Prepared for:

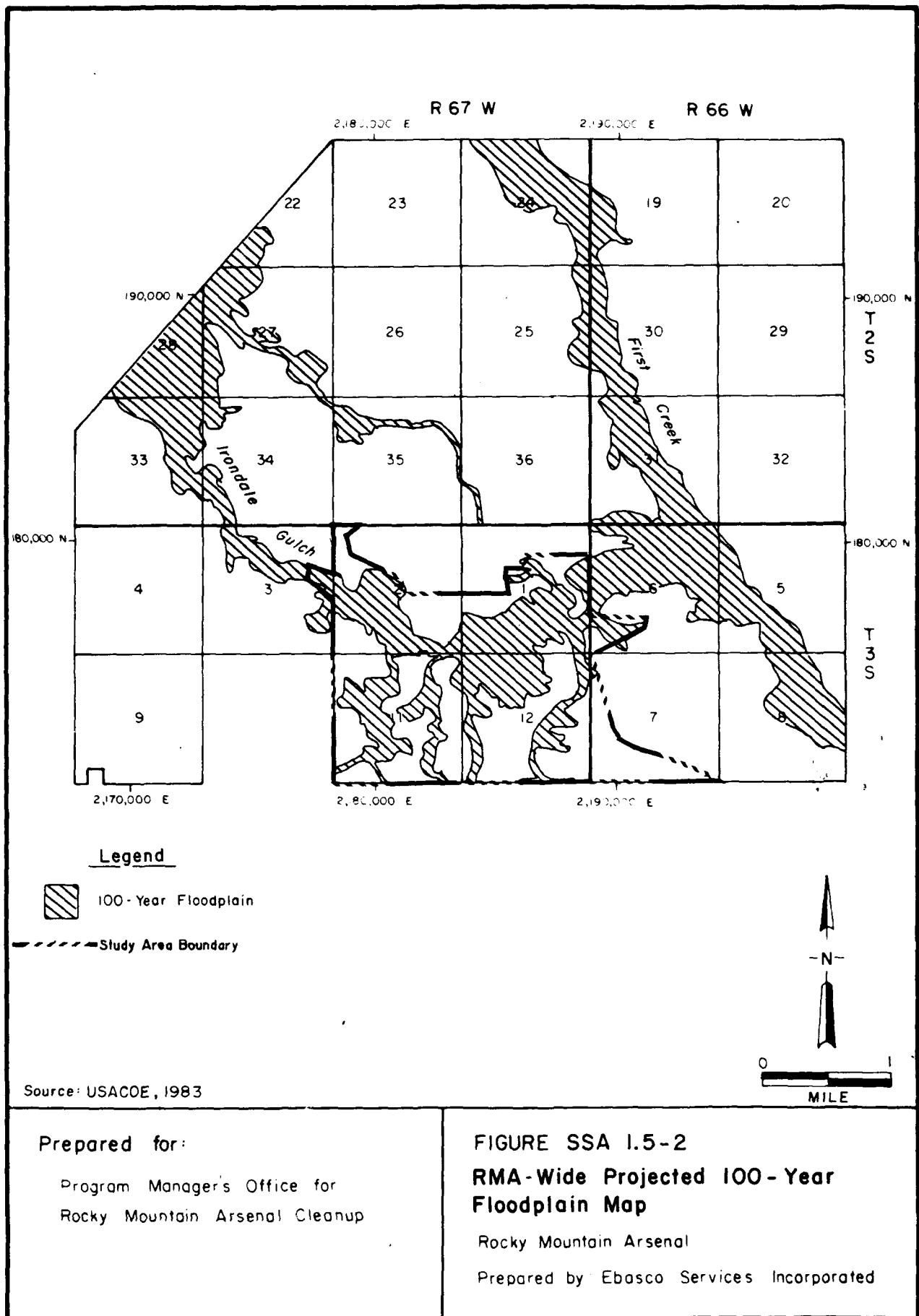
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

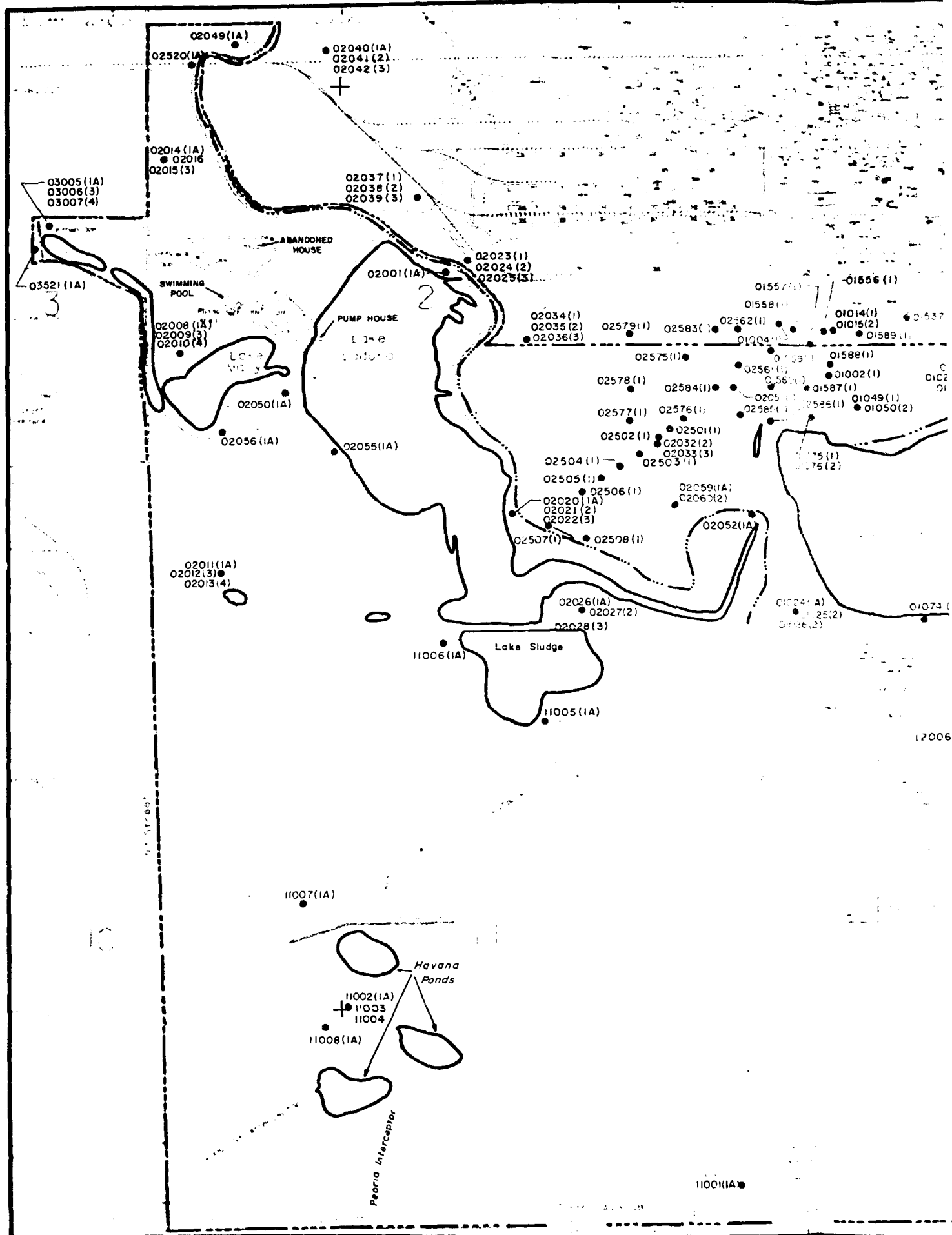
FIGURE SSA 1.5-1

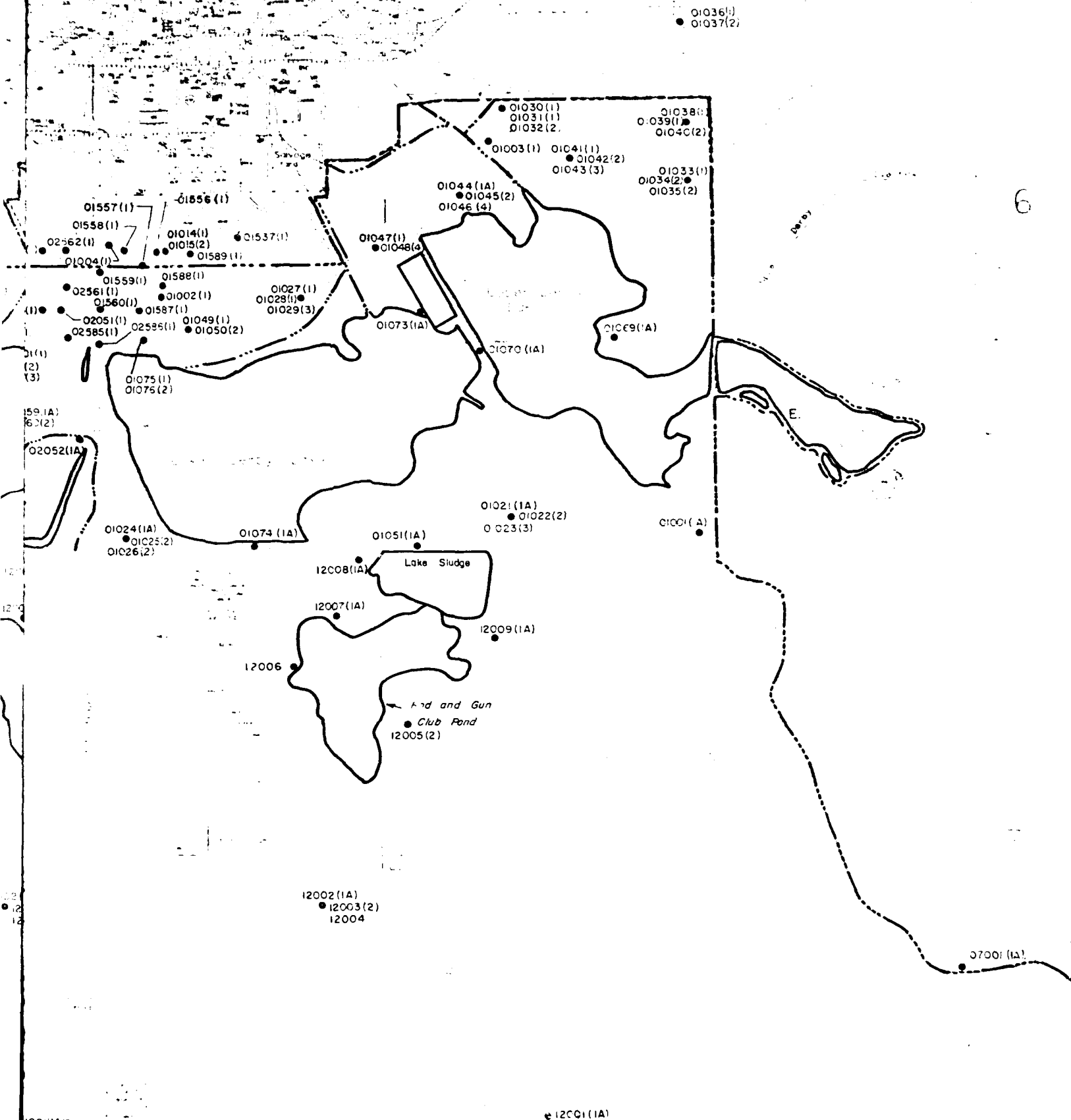
Surface Water Drainage Basins
at the Rocky Mountain Arsenal

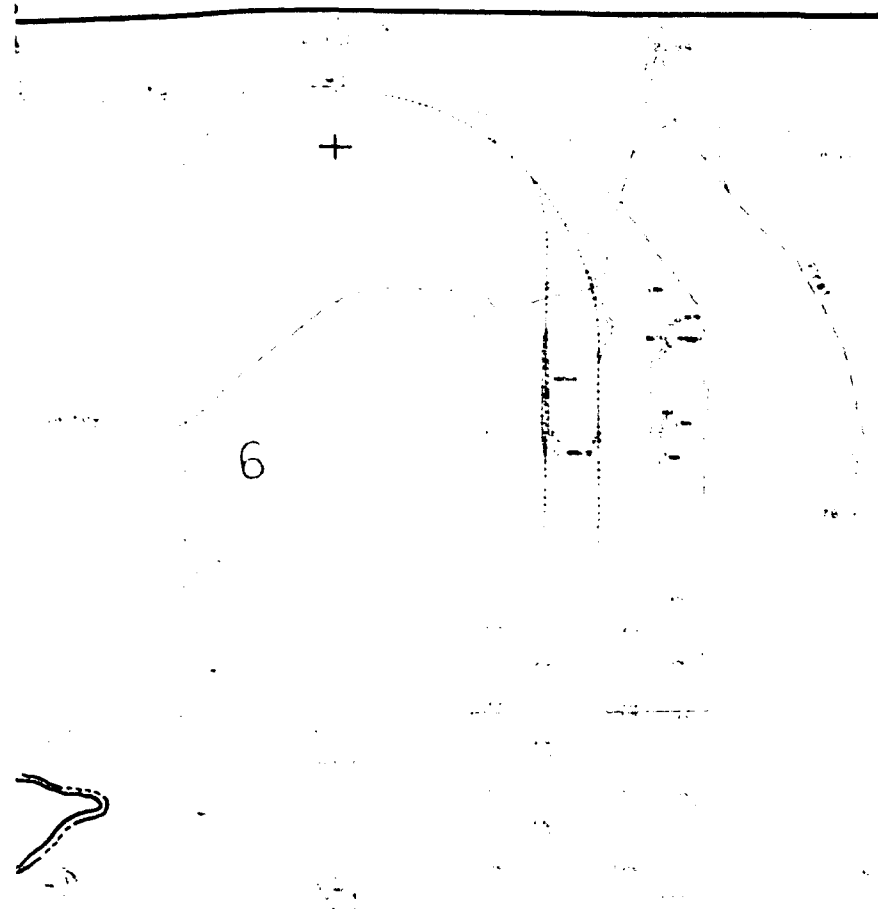
Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated







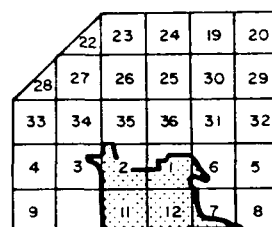


LEGEND

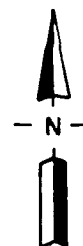
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence

- 6 Section Number
- Stream or Ditch
- Study Area Boundary
- 01001(1A) Well and Well Number
- Water Bearing Zone
- Paranthesis
- 178,000 State Plane Gr

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 4 MILES



Prepared for :

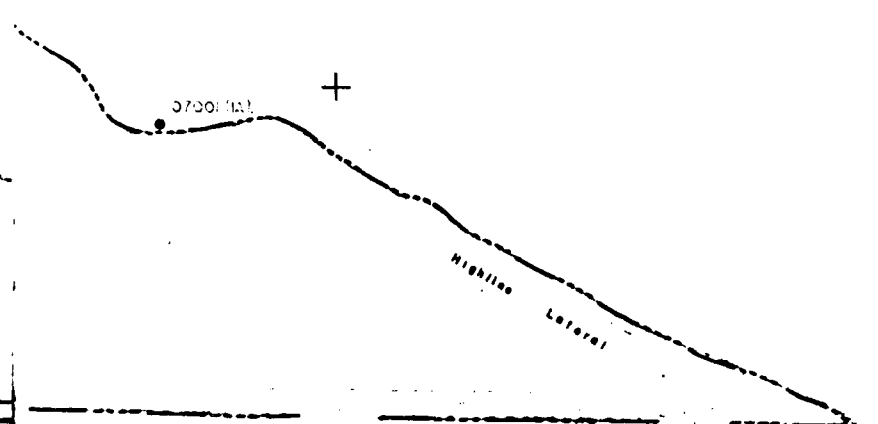
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

Figure: SSA I.5-3




Well Locations -
Southern Study Area

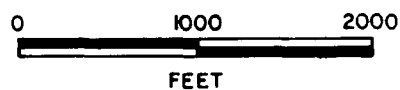
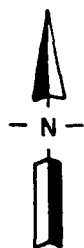
Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated



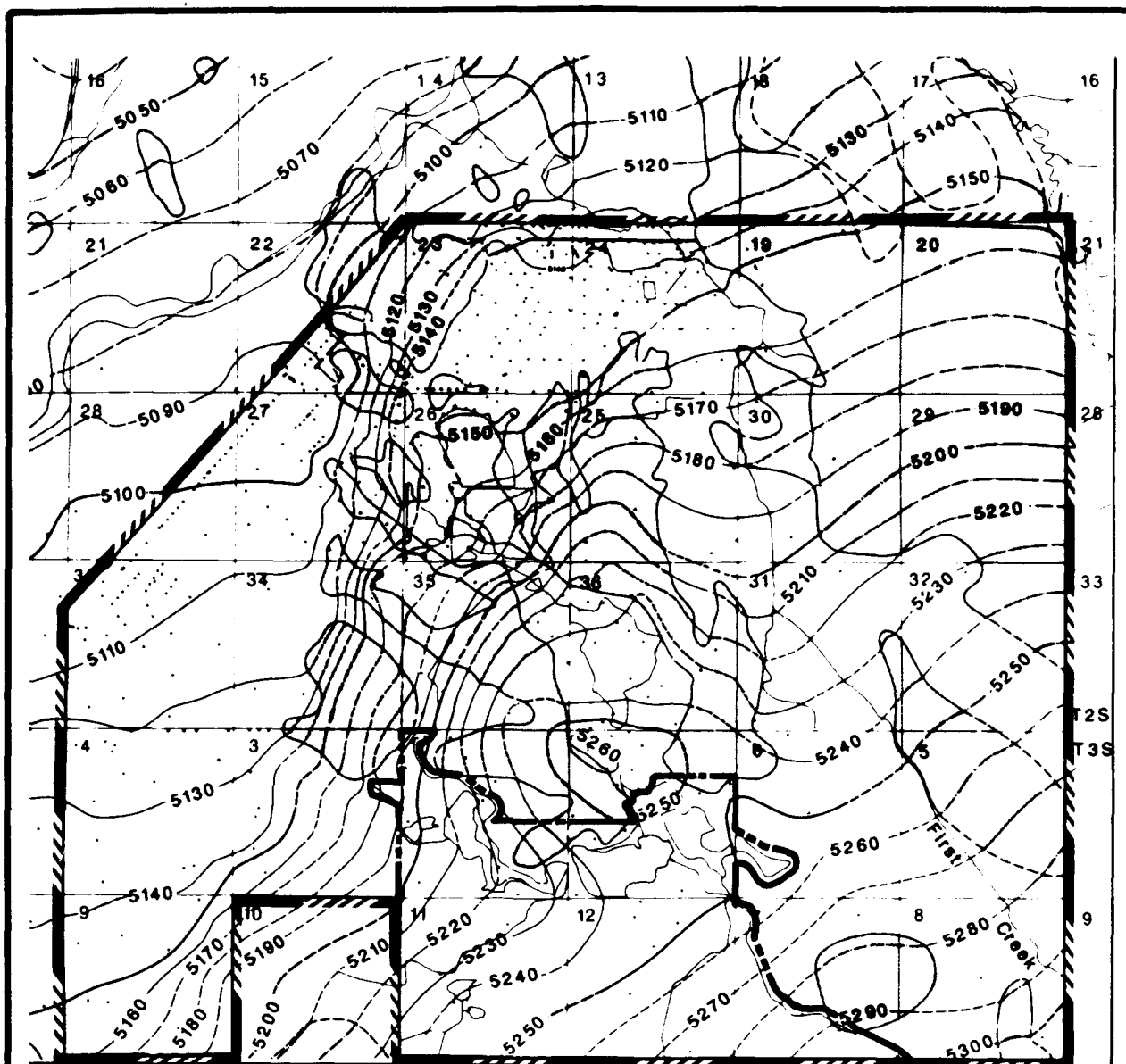
LEGEND

ad	6	Section Number
Road		Stream or Ditch
Tracks		Study Area Boundary
Structure		Well and Well Number
Structure	01001(1A)	Water Bearing Zone in Parenthesis
	178,000	State Plane Grid



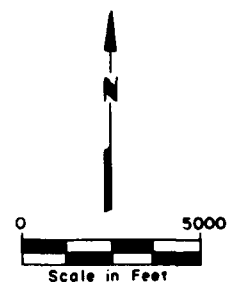
er's Office for
Arsenal Cleanup

-3
s -
dy Area
Arsenal
asco Services Incorporated



LEGEND

- Contour Interval Equals 10 Feet
 Elevations in Feet
 Datum Mean Sea Level
- | | |
|----------------------|---------------------|
| Unsaturated Alluvium | Data Point Well |
| Inferred Contour | Arsenal Boundry |
| Interpreted Contour | Study Area Boundary |



Prepared for:

Program Manager's Office for
 Rocky Mountain Arsenal Cleanup

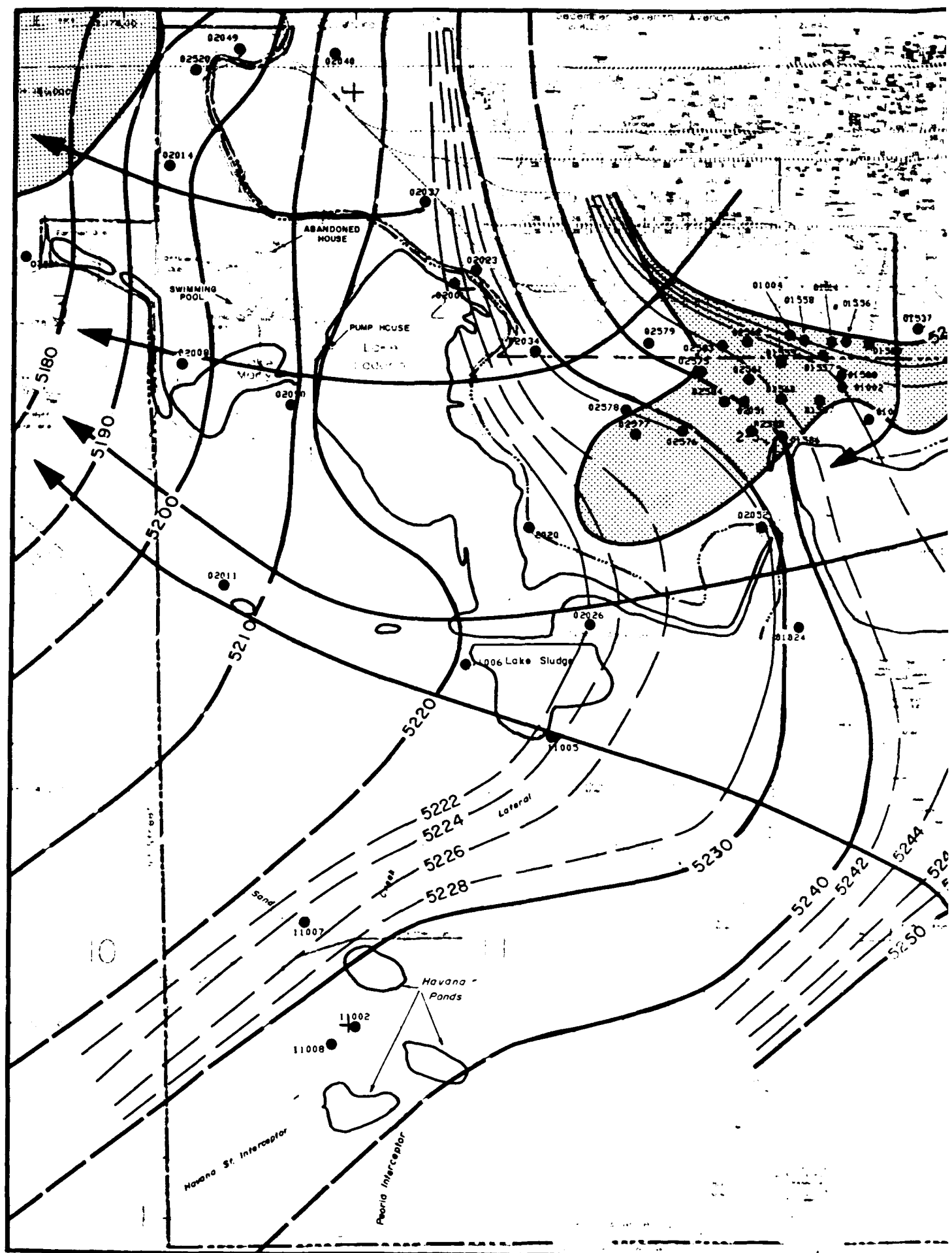
FROM: WRIR, ESE

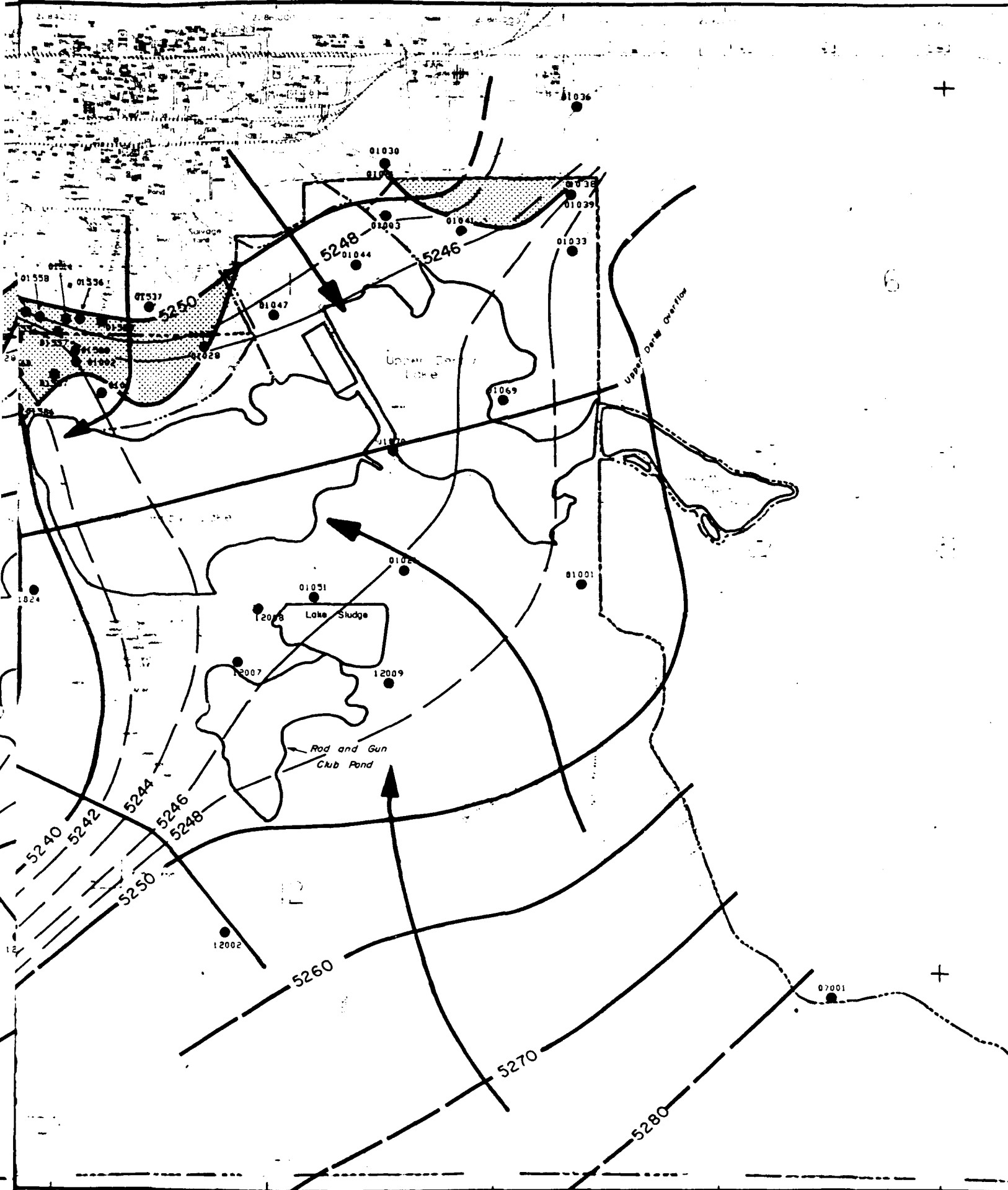
FIGURE SSA I.5-4

RMA Wide Water Table Contour Map, April-June 1987

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







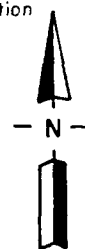
Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- 543 Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- Unsaturated Alluvium
- 178,006 State Plane Grid
- 01001 Well Location and Number
- 5220 10 ft Contour Interval, Contour & Elevation in feet above msl (Dashed Where Inferred)
- Generalized Direction of Groundwater Flow

ROCKY MOUNTAIN ARSENAL
LOCATION

	22	23	24	19	20
28	27	26	25	30	29
33	34	35	36	31	32
4	3	2	1	6	5
9		11	12	7	8

1" = 4 MILES



0 1000 2000
FEET

Prepared for :

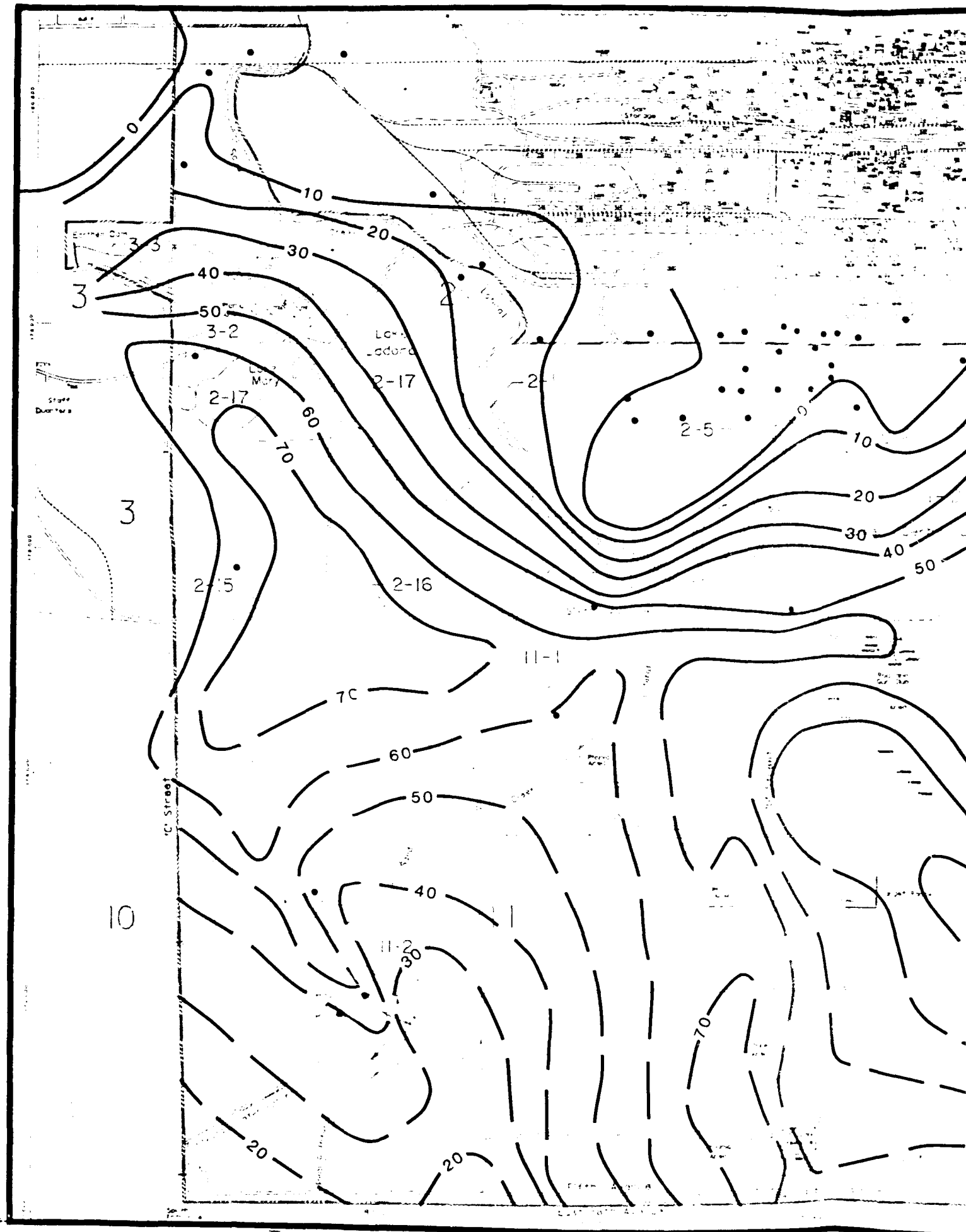
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA I.5-5

Water Table Elevations
April, 1988

Rocky Mountain Arsenal

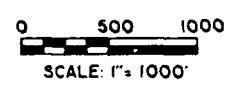
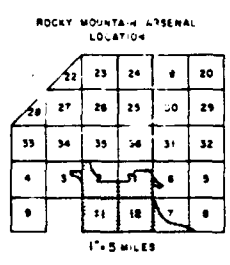
Prepared by : Ebasco Services Incorporated





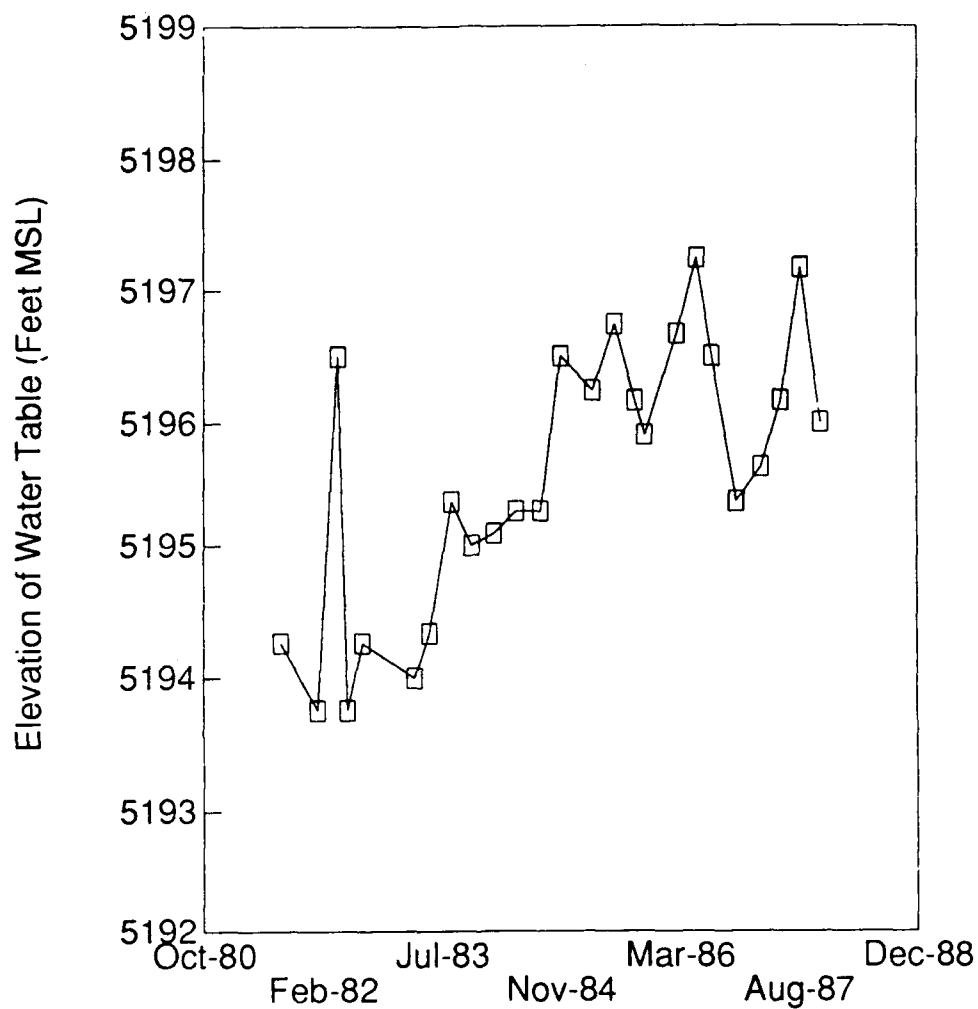


- LEGEND**
- Improved Road
 - - - Unimproved Road
 - + + + Railroad Tracks
 - Existing Structure
 - Former Structure
 - - - Fence
 - 6** Section Number
 - ~ Stream or Ditch
 - ▬ Study Area Boundary
 - 174,000 State Plane Grid
 - Control Point
 - ~ Contour B Saturated Thickness in feet
 - Contour Interval is 10 Feet



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 Rocky Mountain Arsenal Cleanup

FIGURE: SSA 1.5-6
 Alluvial Aquifer Saturated Thickness
 April, 1988 Southern Study Area
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated



Prepared for:

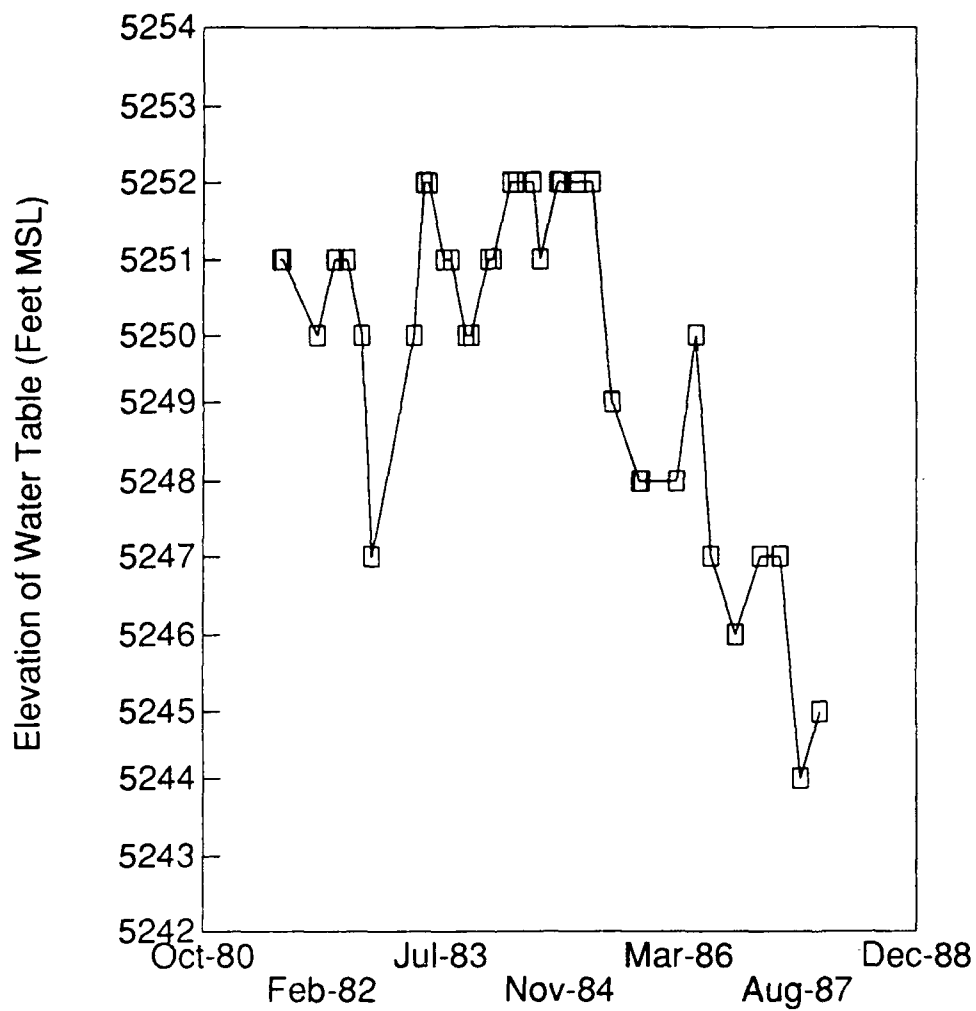
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-7

Hydrograph of Well 02008-
Water Bearing Zone 1A

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



Prepared for:

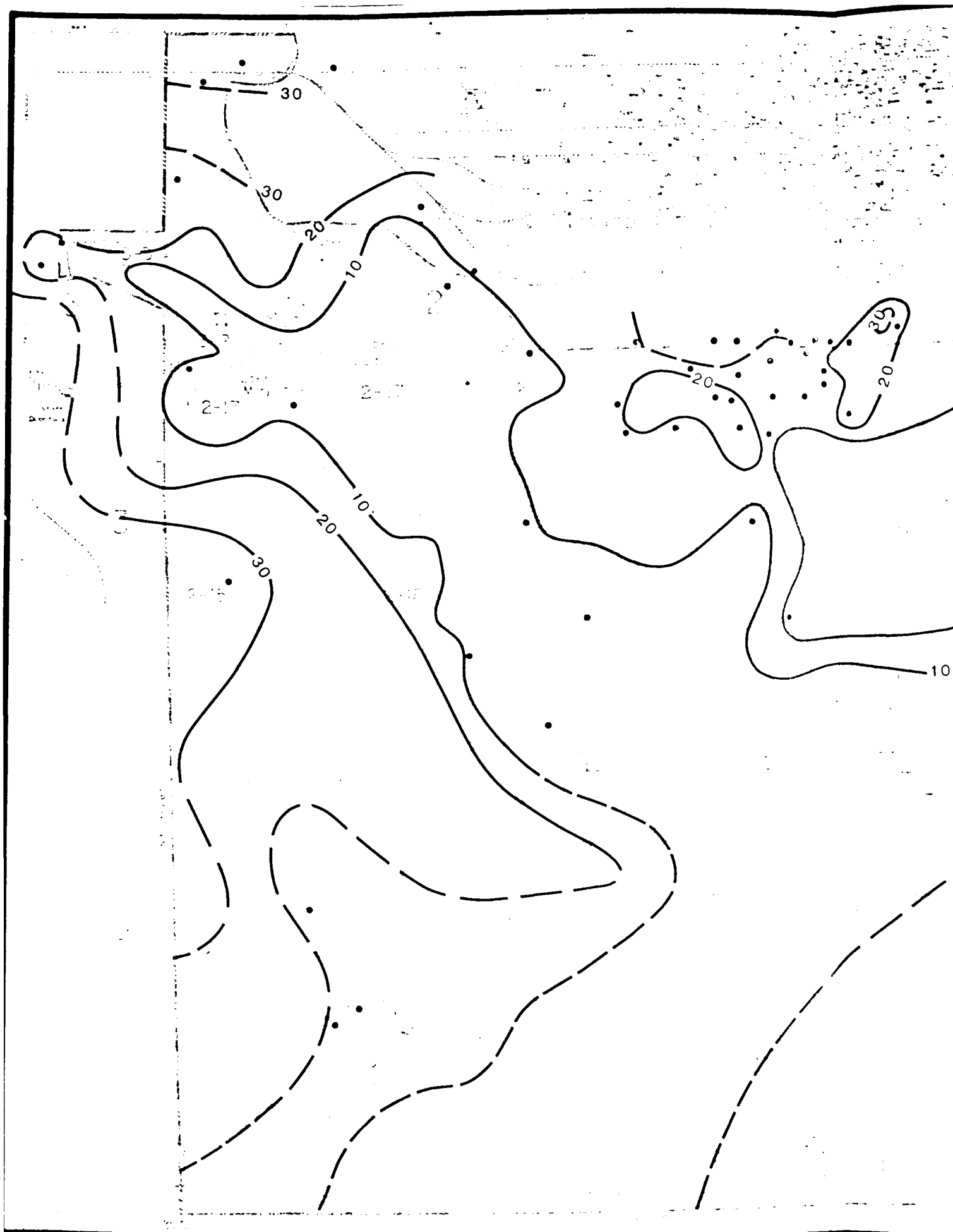
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-8

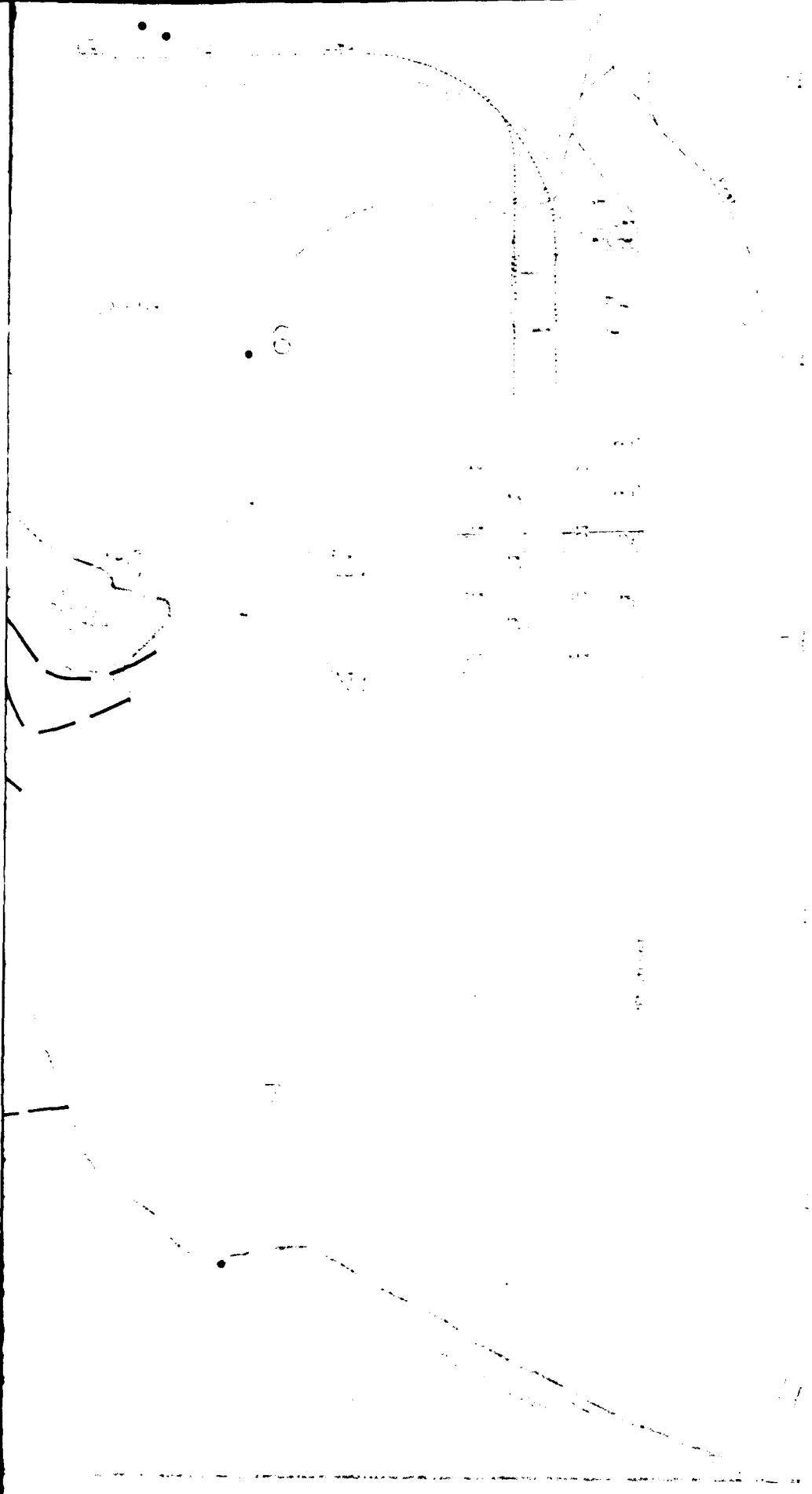
Hydrograph of Well O1027-
Water Bearing Zone I

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



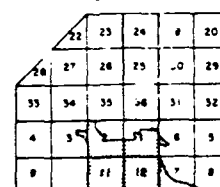




LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid
- Control Point
- Contour B: Depth to Water in Feet (Dashed Where Inferred)
- 0 ft. Contour Interval

ROCKY MOUNTAIN ARSENAL LOCATION



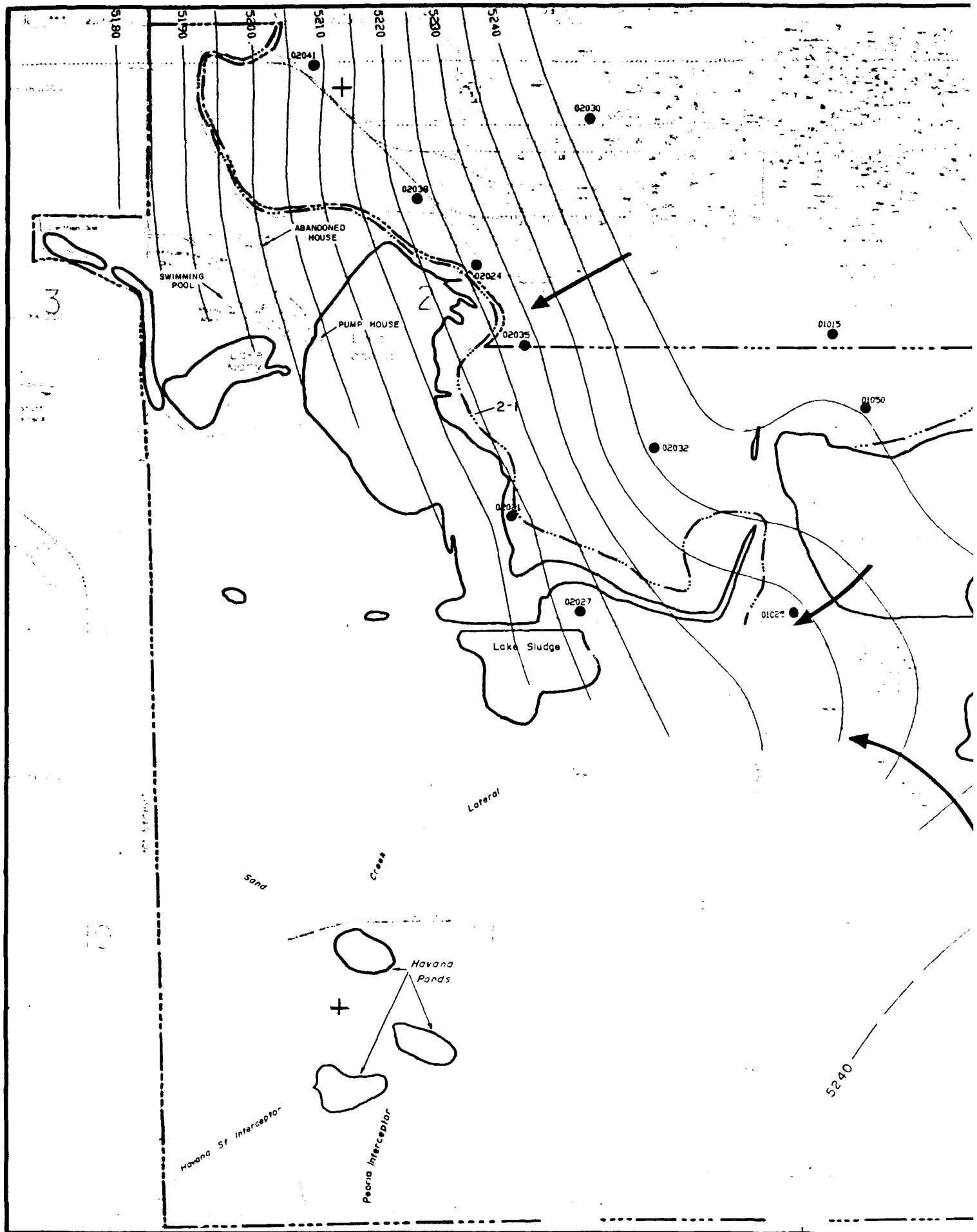
1" = 5 MILES

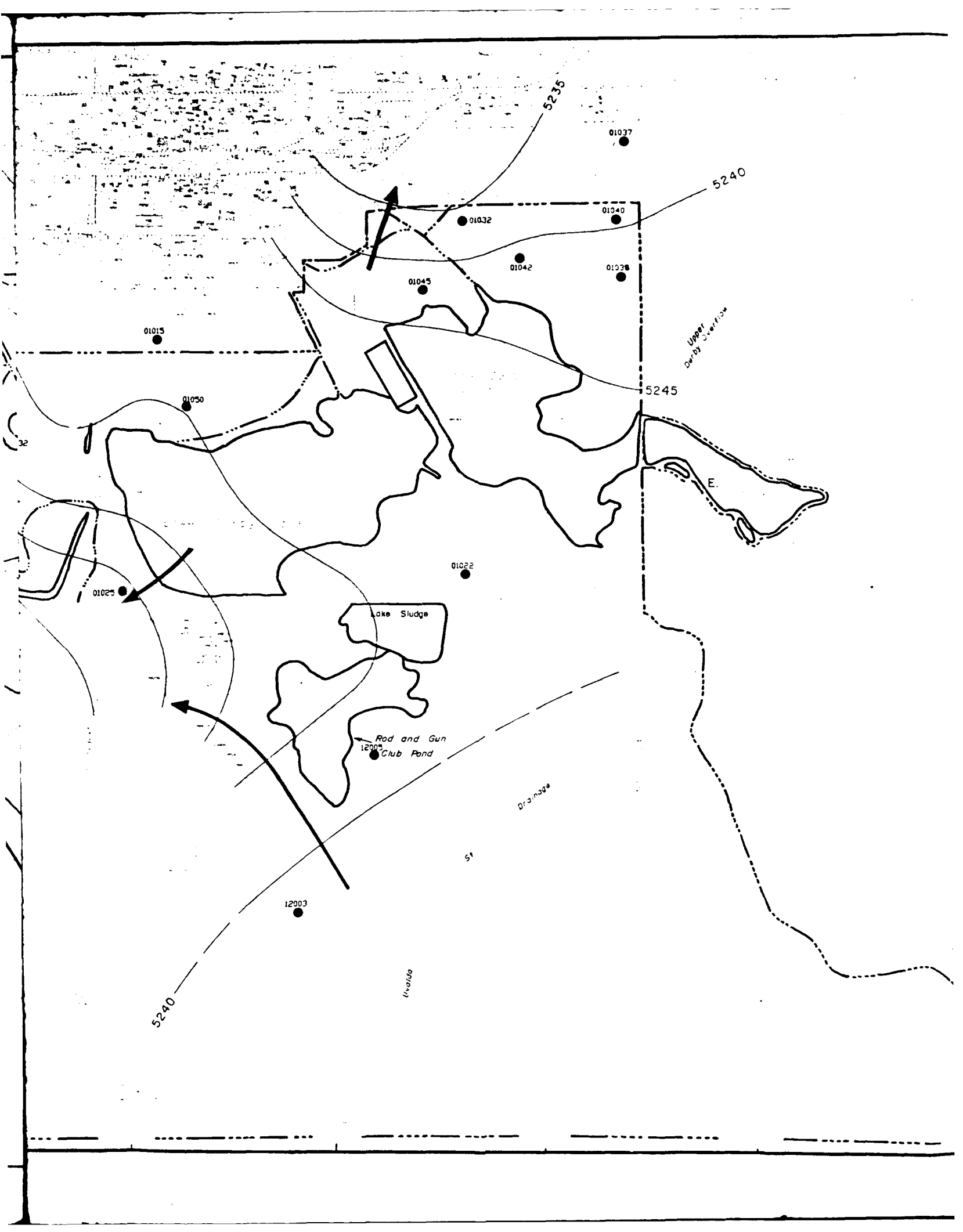
0 500 1000
SCALE: 1" = 1000'

Prepared for:

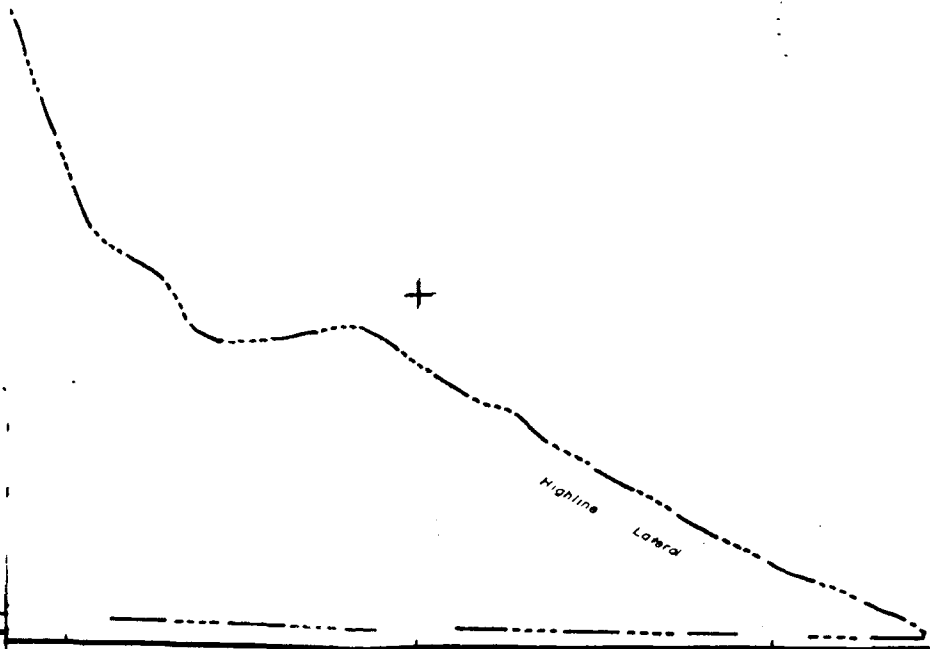
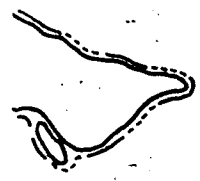
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 15-9
Depth to Water Table April, 1988
Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





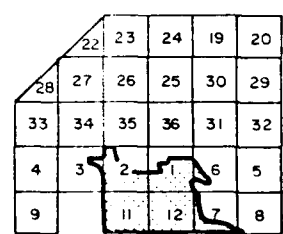
240



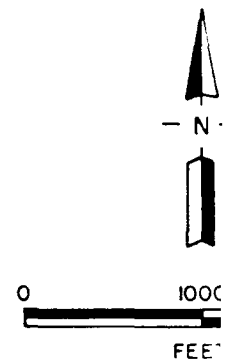
Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- Groundwater above MSL Contour with Elevation in (Dashed where inferred) State Plane Grid
- Well Location and Number
- Direction of Groundwater
- Contour Interval 5 Feet

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 4 MILES



Prepared for :

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA I.5-10
Potentiometric Surface of Water
Bearing Zone 2, April 1988
Rocky Mountain Arsenal
Prepared by : Ebasco Services Incorporated

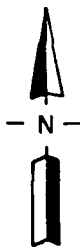
Legend

- Improved Road
- - - Unimproved Road
- - - Railroad Tracks
- [543] Existing Structure
- [] Former Structure
- - - Fence
- [] Section Number
- - - Stream or Ditch
- - - Study Area Boundary
- 5240 Groundwater above MSL
Contour with Elevation in feet
(Dashed where inferred)
- 178,000 State Plane Grid
- 01040 Well Location and Number
- ← Direction of Groundwater Flow
- Contour Interval 5 Feet

MOUNTAIN ARSEVAL
ACTION

24	19	20
25	30	29
36	31	32
6	5	
2	7	8

VALUES



for :

Manager's Office for
Mountain Arsenal Cleanup

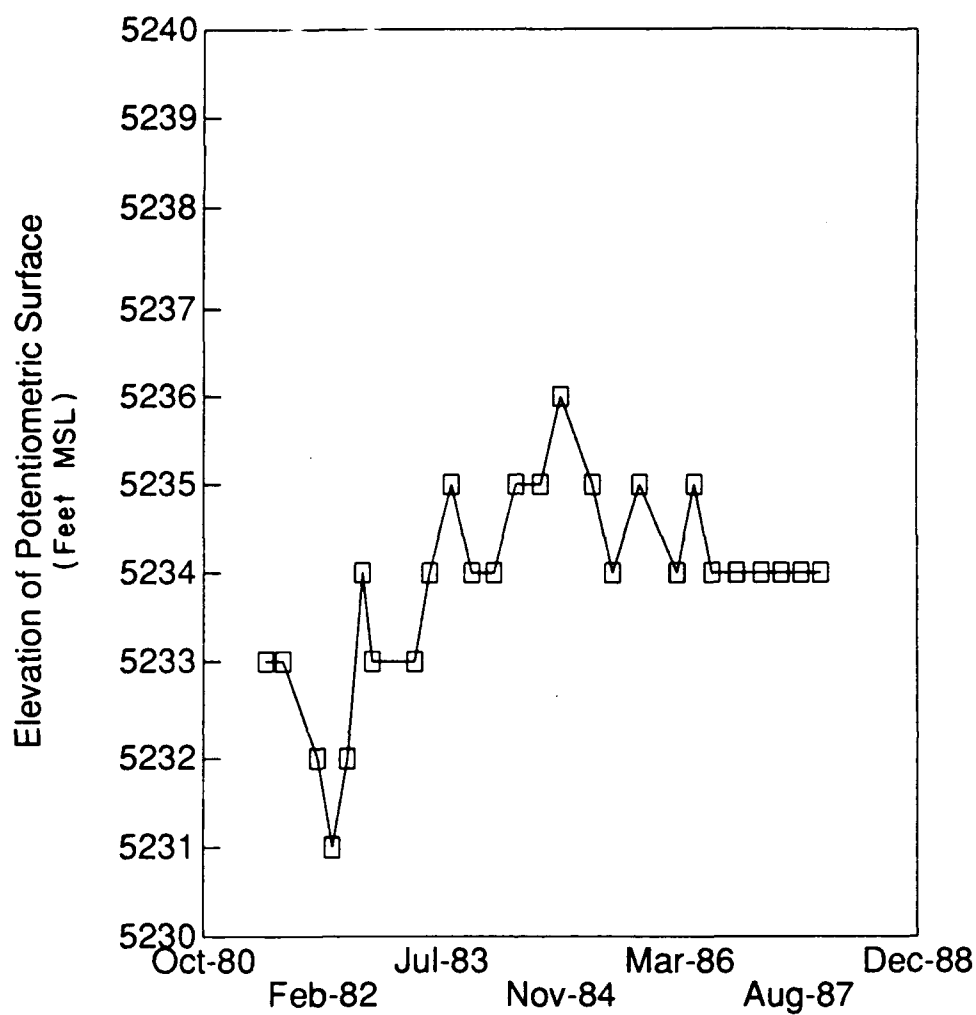
SSA 1.5-10

ometric Surface of Water

Zone 2, April 1988

ountain Arsenal

by : Ebasco Services Incorporated



Prepared for:

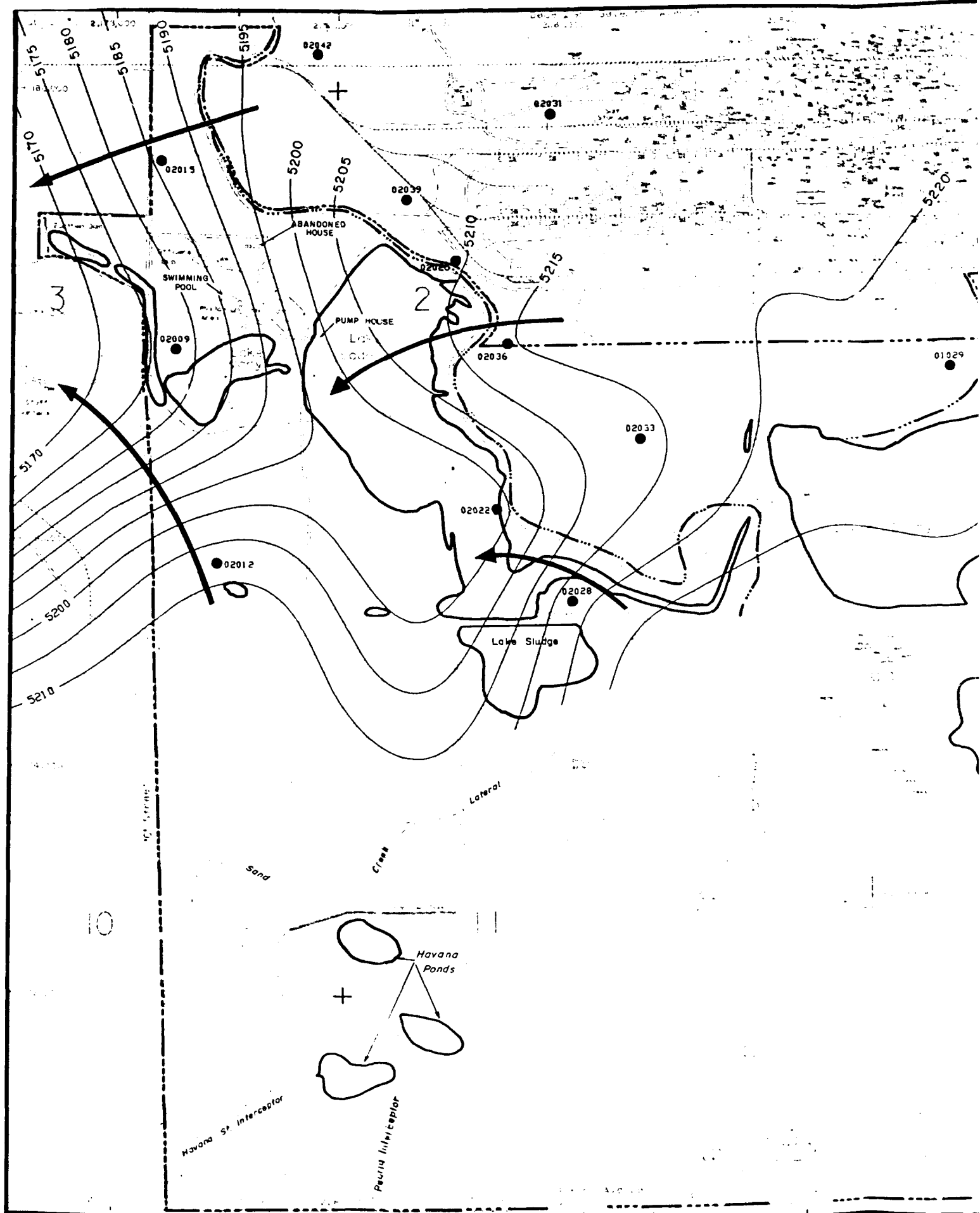
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

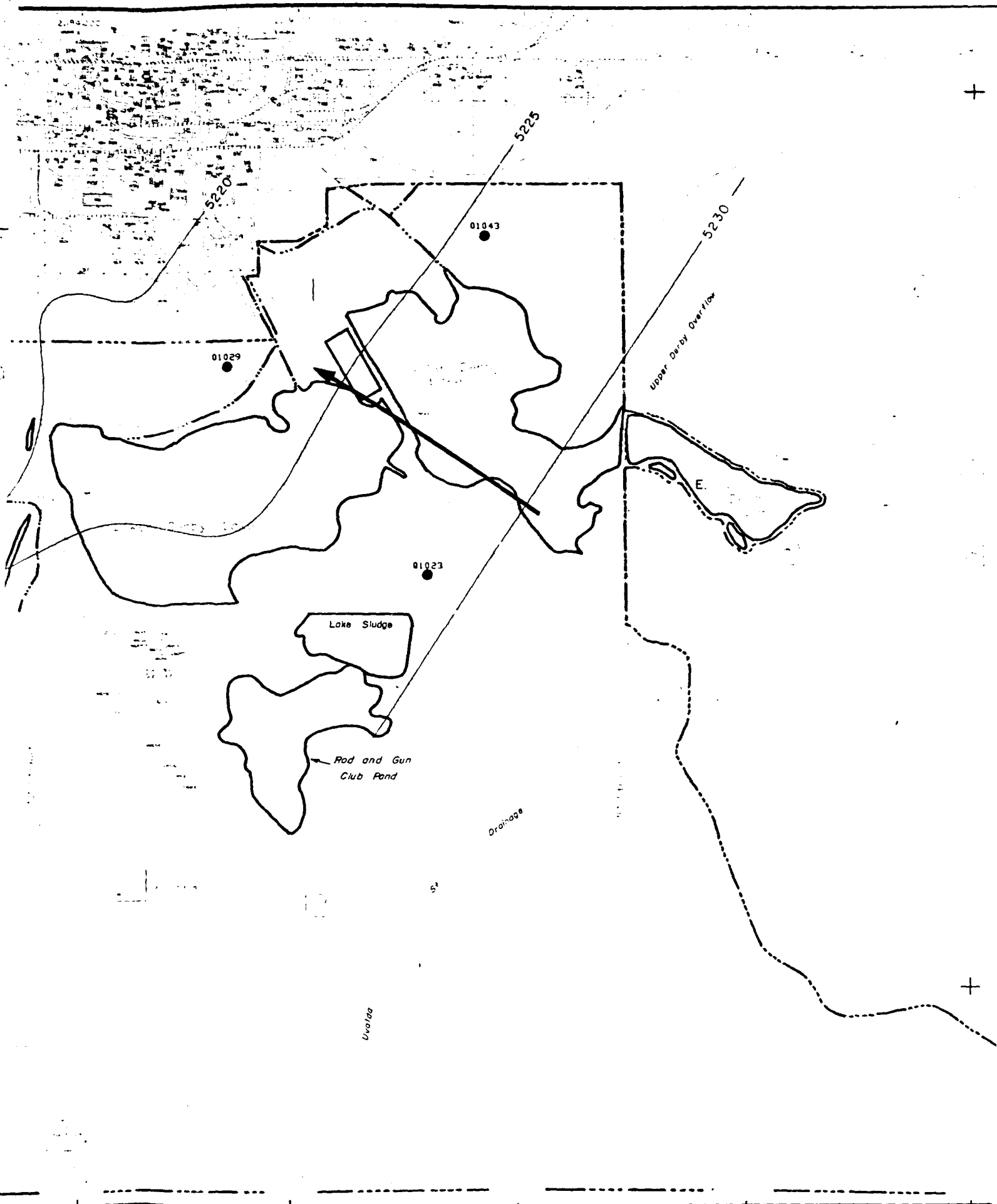
FIGURE SSA 1.5-11

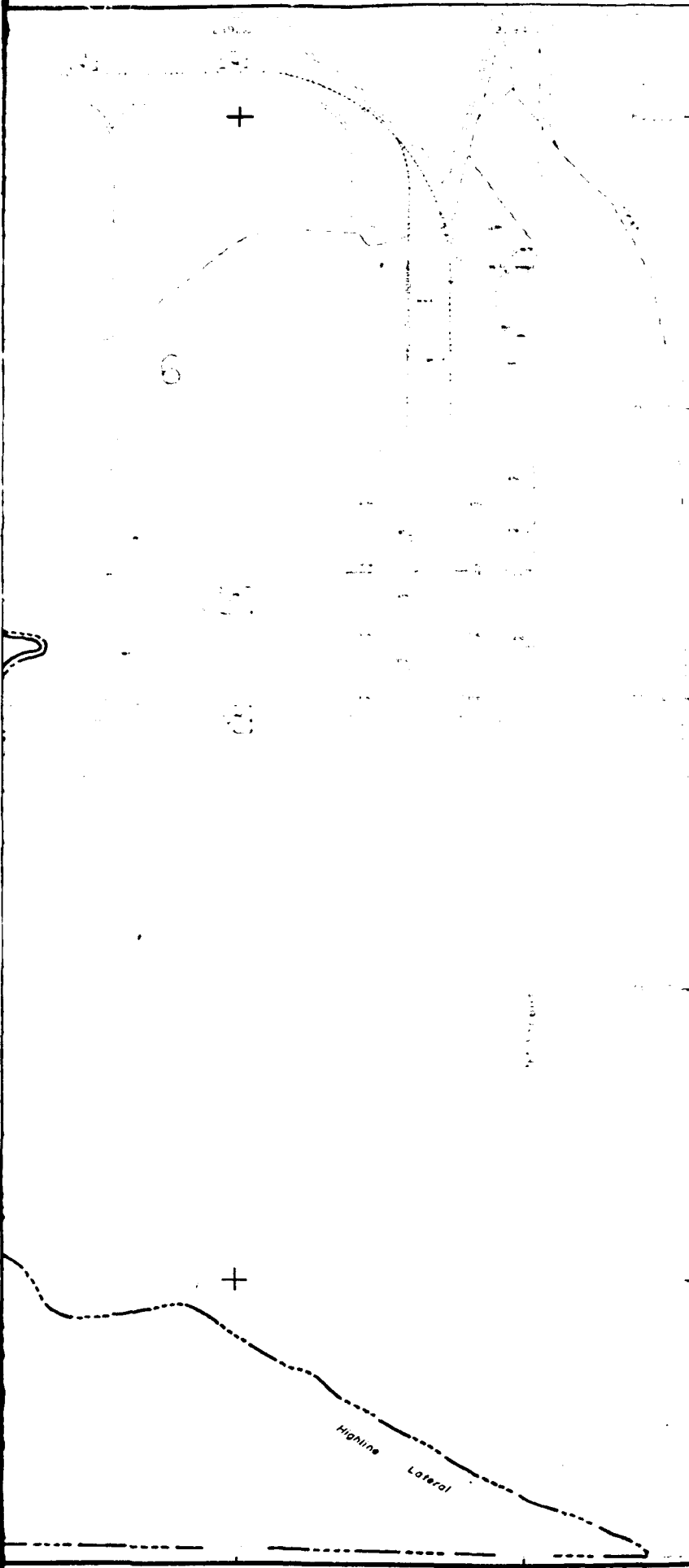
Hydrograph of Well O1025 -
Water Bearing Zone 2

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







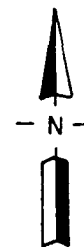
Legend

- Improved Road
- - - - - Unimproved Road
- +—+—+— Railroad Tracks
- [543] Existing Structure
- [] Former Structure
- - - - - Fence
- 6 Section Number
- - - - - Stream or Ditch
- - - - - Study Area Boundary
- 5210— Groundwater above MSL Contour with Elevation in feet
- 178,000 State Plane Grid
- 01043 Well Location and Number
- ↖ Direction of Groundwater Flow Contour Interval 5 Feet

ROCKY MOUNTAIN ARSENAL LOCATION

		22	23	24	19	20
	28	27	26	25	30	29
33	34	35	36	31	32	
4	3	2	6	5		
9		11	12	7	8	

1" = 4 MILES



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Rocky Mountain Arsenal Cleanup

FIGURE SSA I.5-12

**Potentiometric Surface of Water
Bearing Zone 3, April 1988**

Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated

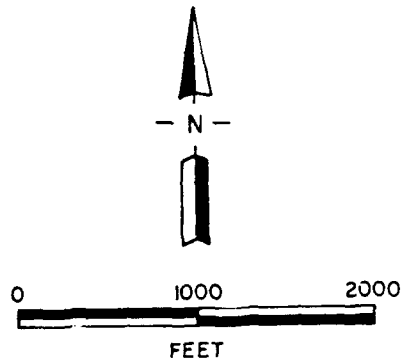
Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- Groundwater above MSL
Contour with Elevation in feet
- State Plane Grid
- Well Location and Number
- Direction of Groundwater Flow
- Contour Interval: 5 Feet

ROCKY MOUNTAIN ARSENAL
LOCATION

22	23	24	19	20
27	26	25	30	29
34	35	36	31	32
3	2	1	5	5
11	12	7	8	

1" = 4 MILES



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Rocky Mountain Arsenal Cleanup

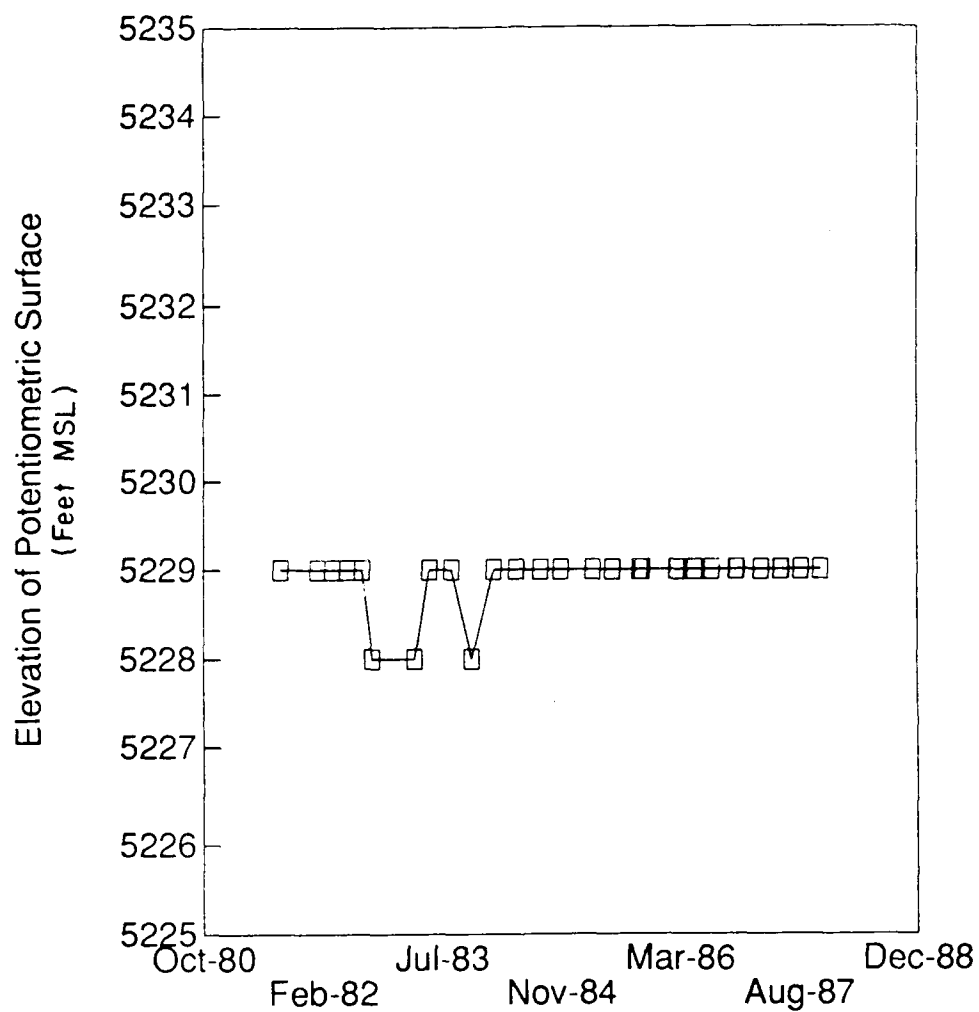
FIGURE SSA 1.5-12

Potentiometric Surface of Water

Bearing Zone 3, April 1988

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated



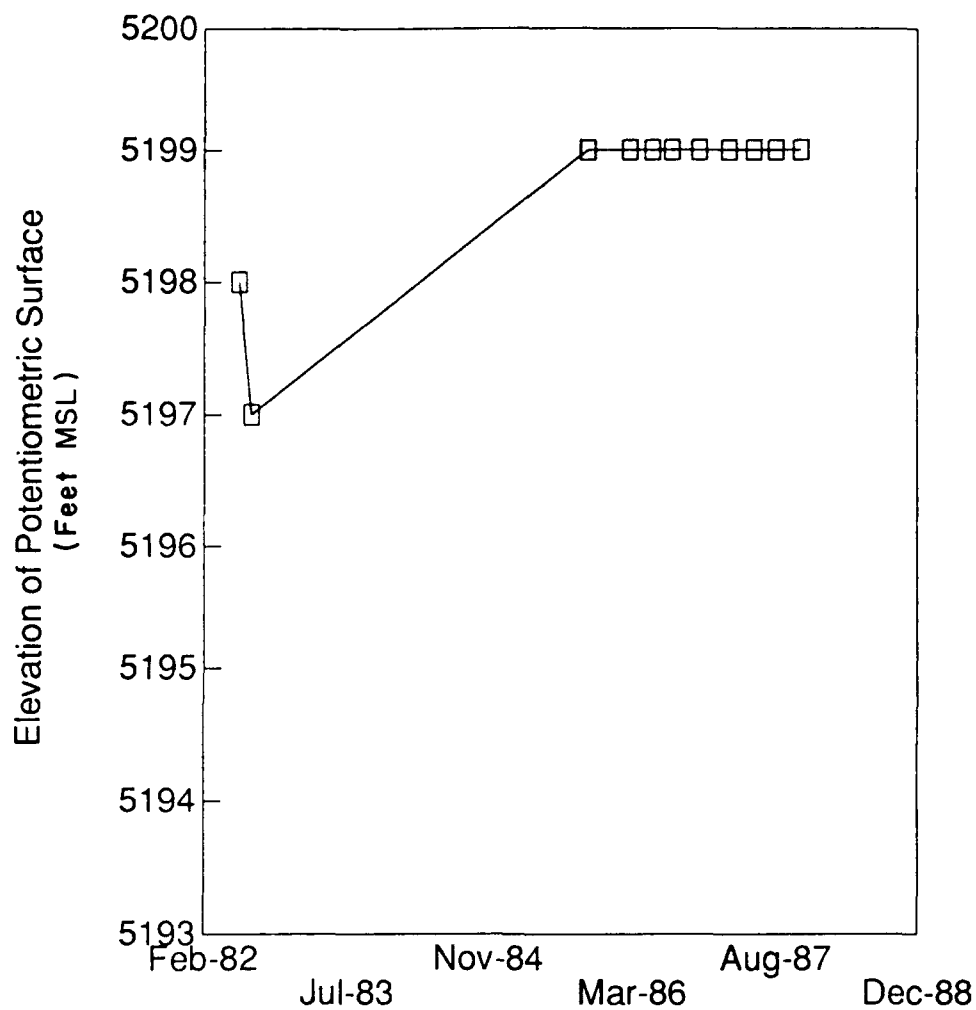
Prepared for:

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Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-13
Hydrograph of Well 01023-
Water Bearing Zone 3

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



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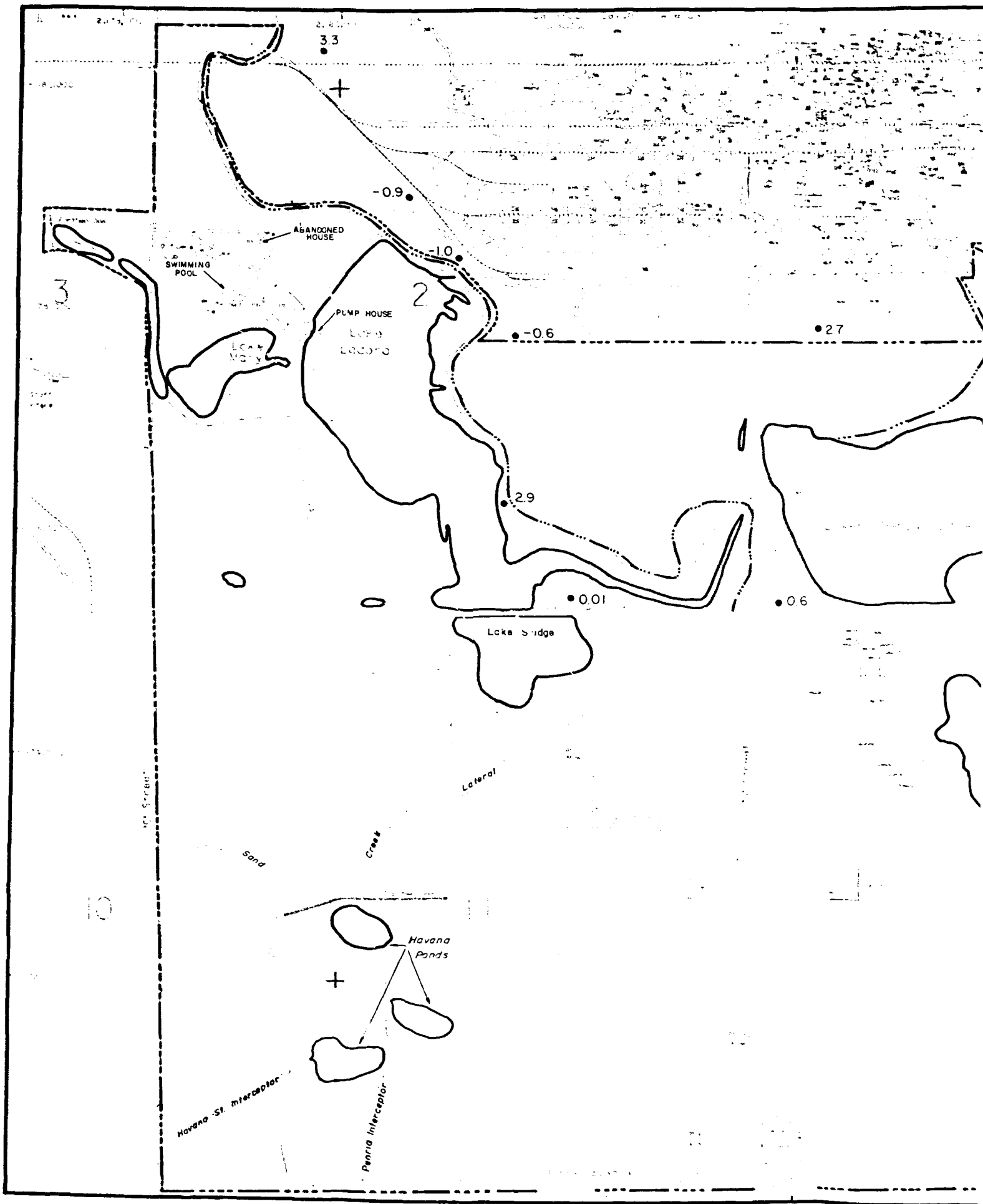
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

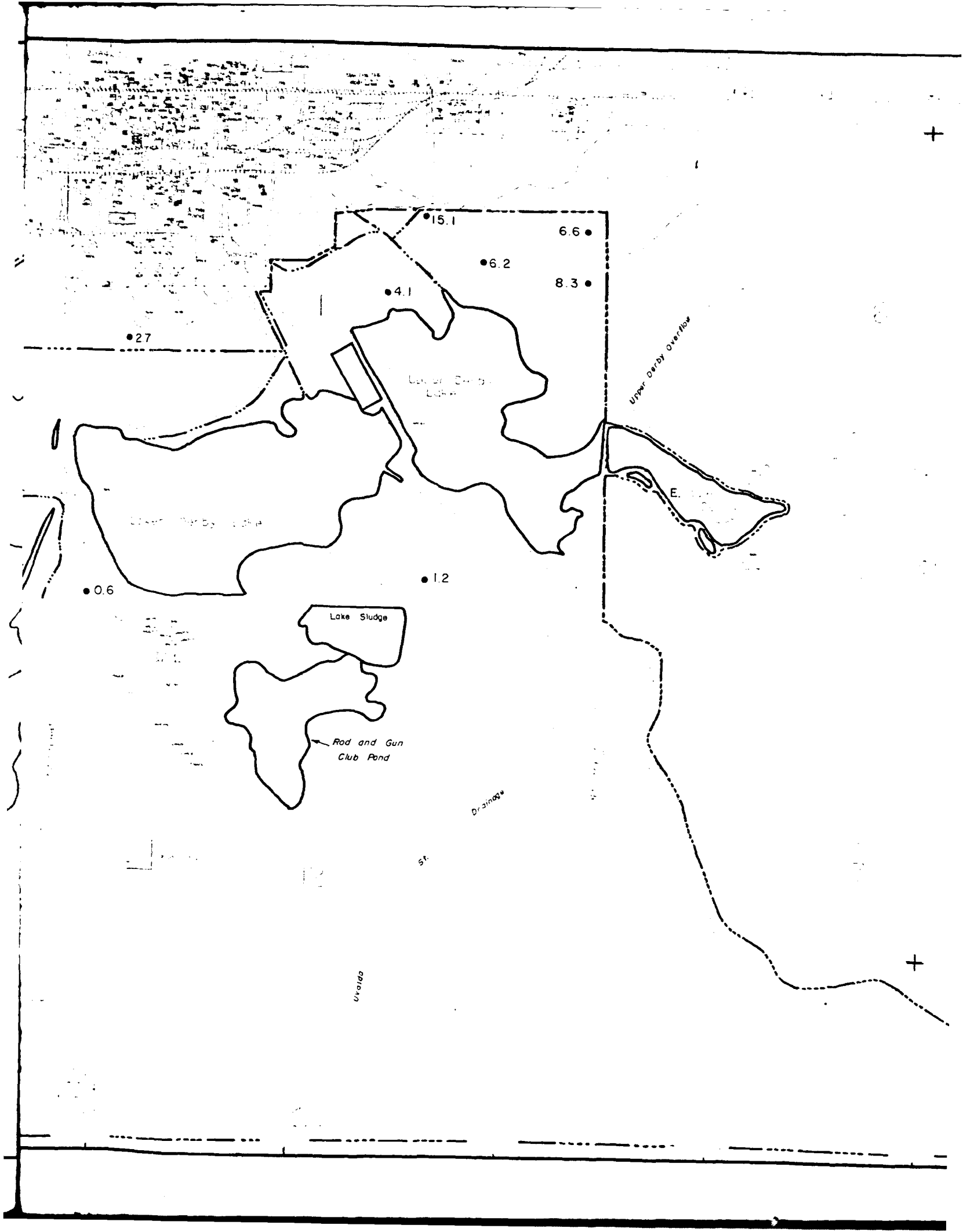
FIGURE SSA 1.5-14

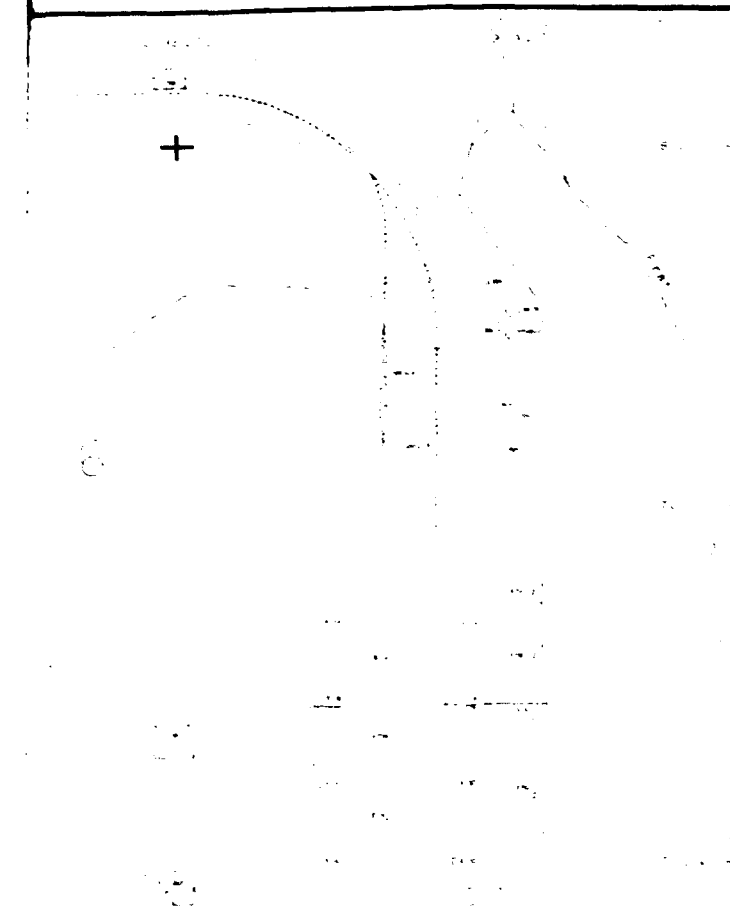
Hydrograph of Well O1046 -
Water Bearing Zone 4

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



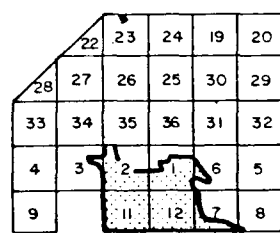




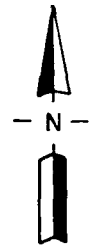
Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- Well Cluster with Head Difference in Feet (Negative number denotes water level in Zone 2 higher than water level in Zone 1A-1)
- State Plane Grid

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 4 MILES



Prepared for :

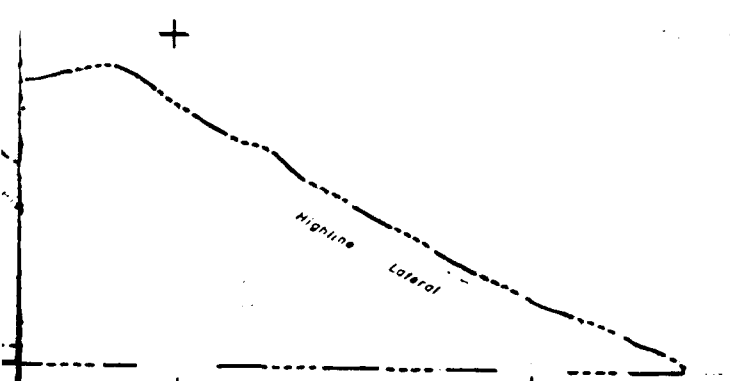
Program Manager's Office for
 Rocky Mountain Arsenal Cleanup
 Aberdeen Proving Ground, Maryland

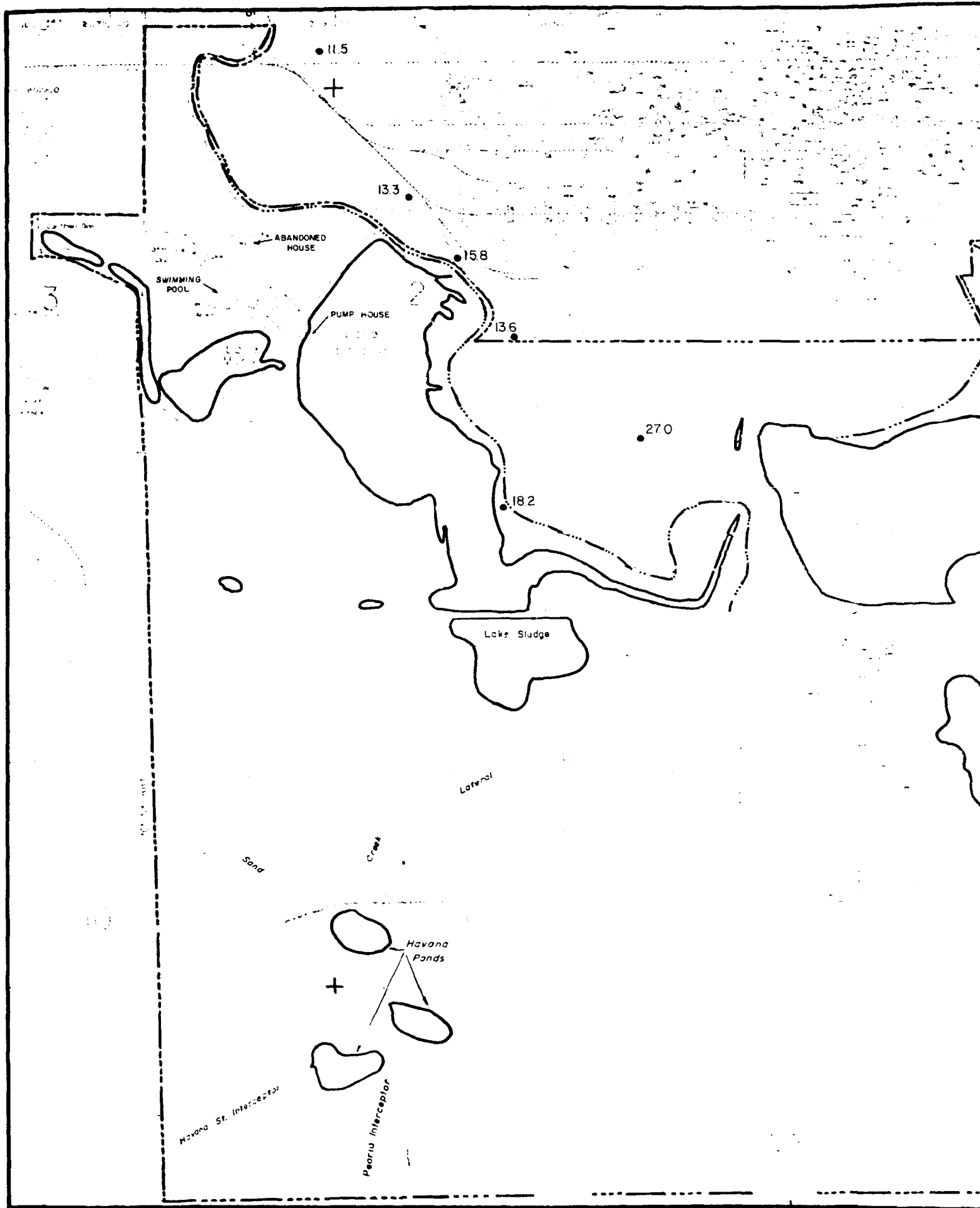
FIGURE SSA 1.5-15

**Head Difference Between
 Zone 1A-1 and Zone 2**

Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated





+

15.5

Upper Derby Overflow

E.

169

Lake Sludge

Rod and Gun
Club Pond

Drainage

St

11.4013

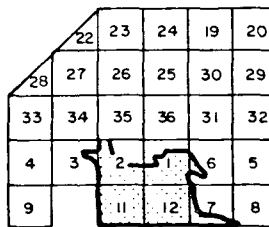
+

+

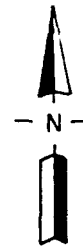
Legend

- Improved Road
- Unimproved Road
- Railroad Tracks
- 543 Existing Structure
- Former Structure
- Fence
- ⊕ Section Number
- Stream or Ditch
- Study Area Boundary
- 1.2 Well Cluster with Head Difference in Feet
- 178,000 State Plane Grid

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 4 MILES



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Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-16

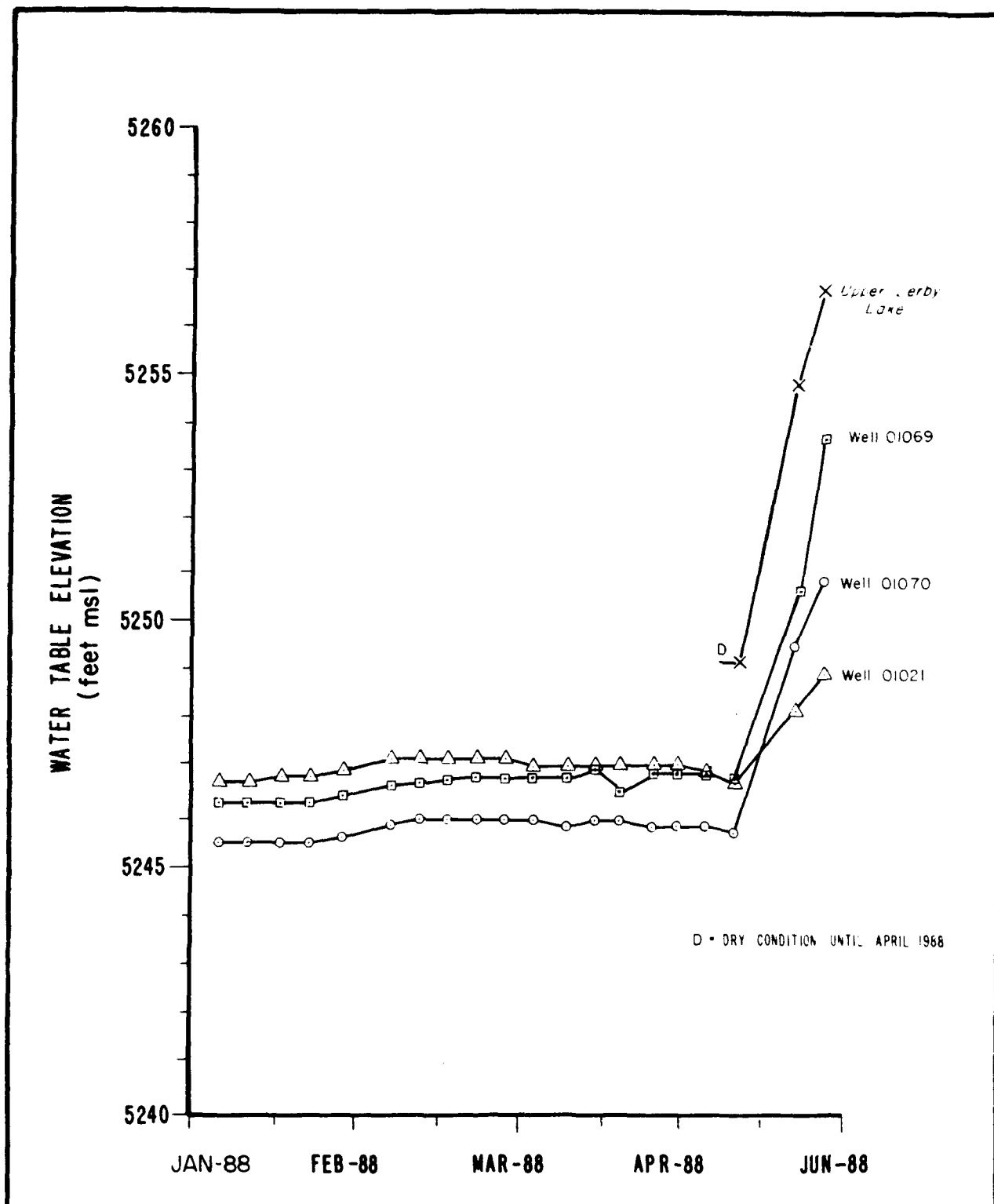
Head Difference Between
Zone 2 and Zone 3

Rocky Mountain Arsenal

Prepared by : Ebasco Services Incorporated

+

Highline
Lateral



Prepared for:

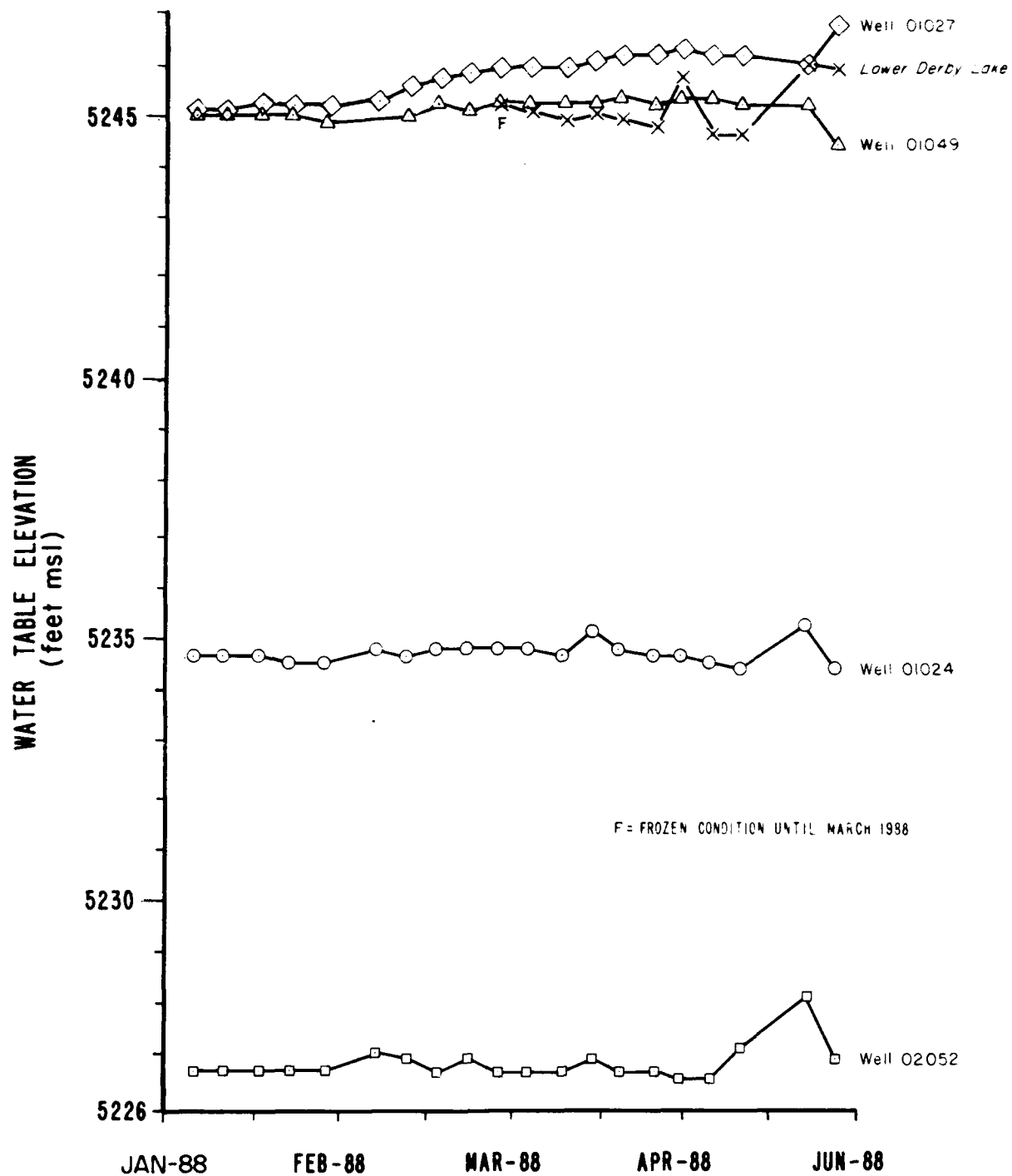
Program Managers Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-17

Hydrographs of *Upper Derby Lake*,
Wells O1021, O1069 and O1070

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



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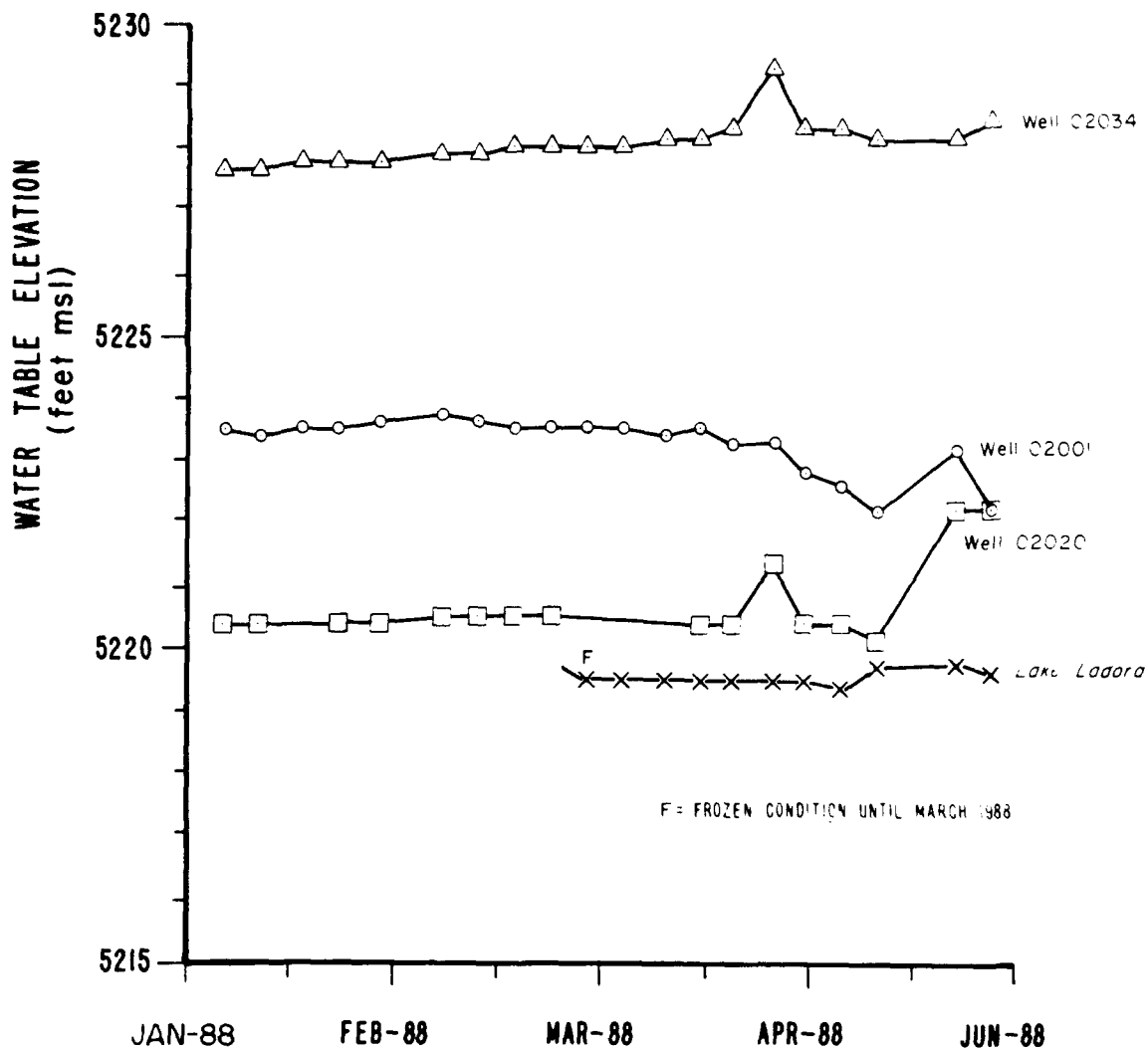
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA I.5-18

Hydrographs of *Lower Derby Lake*,
Wells 01024, 01027, 01049 and 02052

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated



Prepared for:

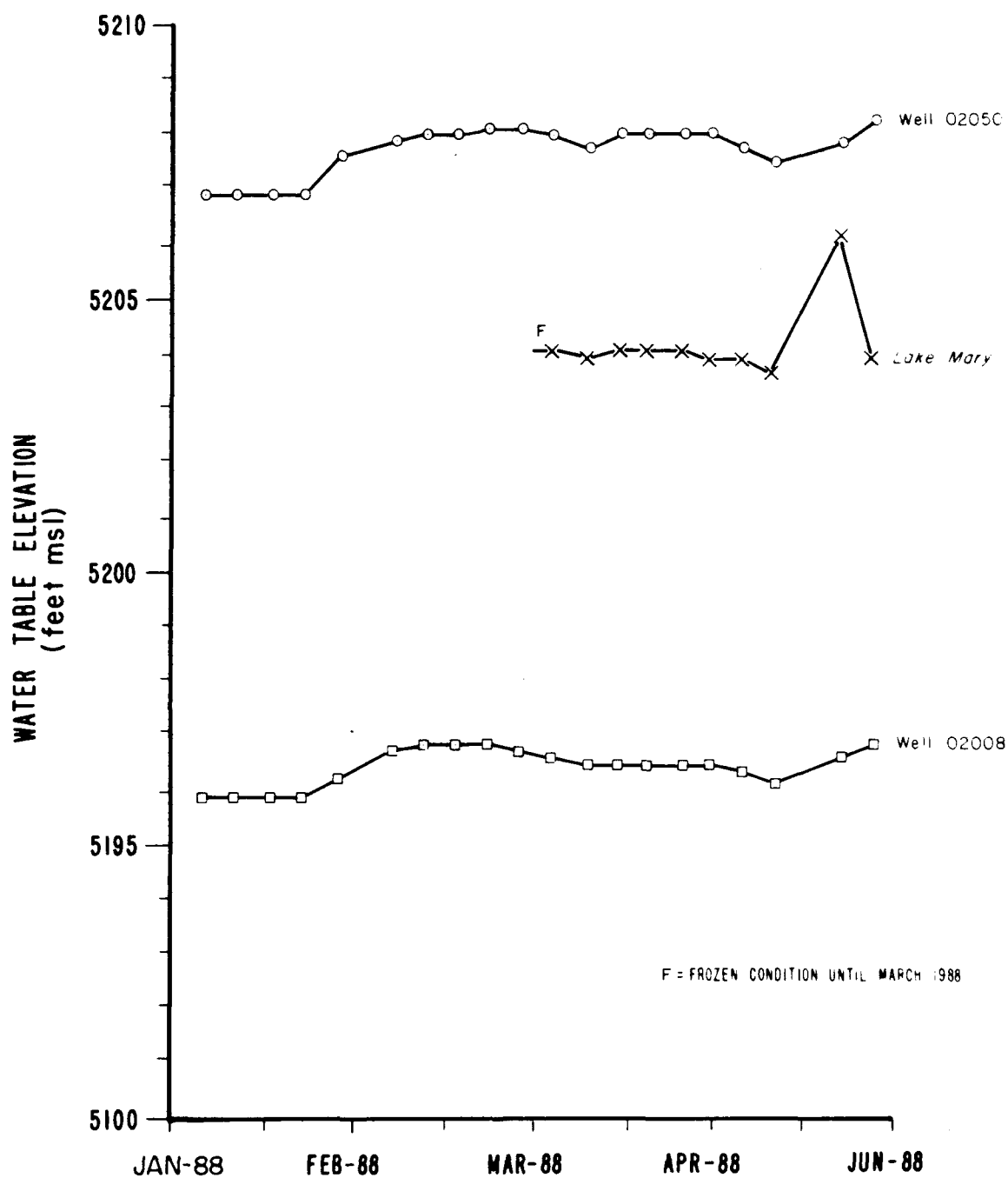
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 1.5-19

Hydrographs of *Lake Ladora*,
Wells 02001, 02020 and 02034

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated



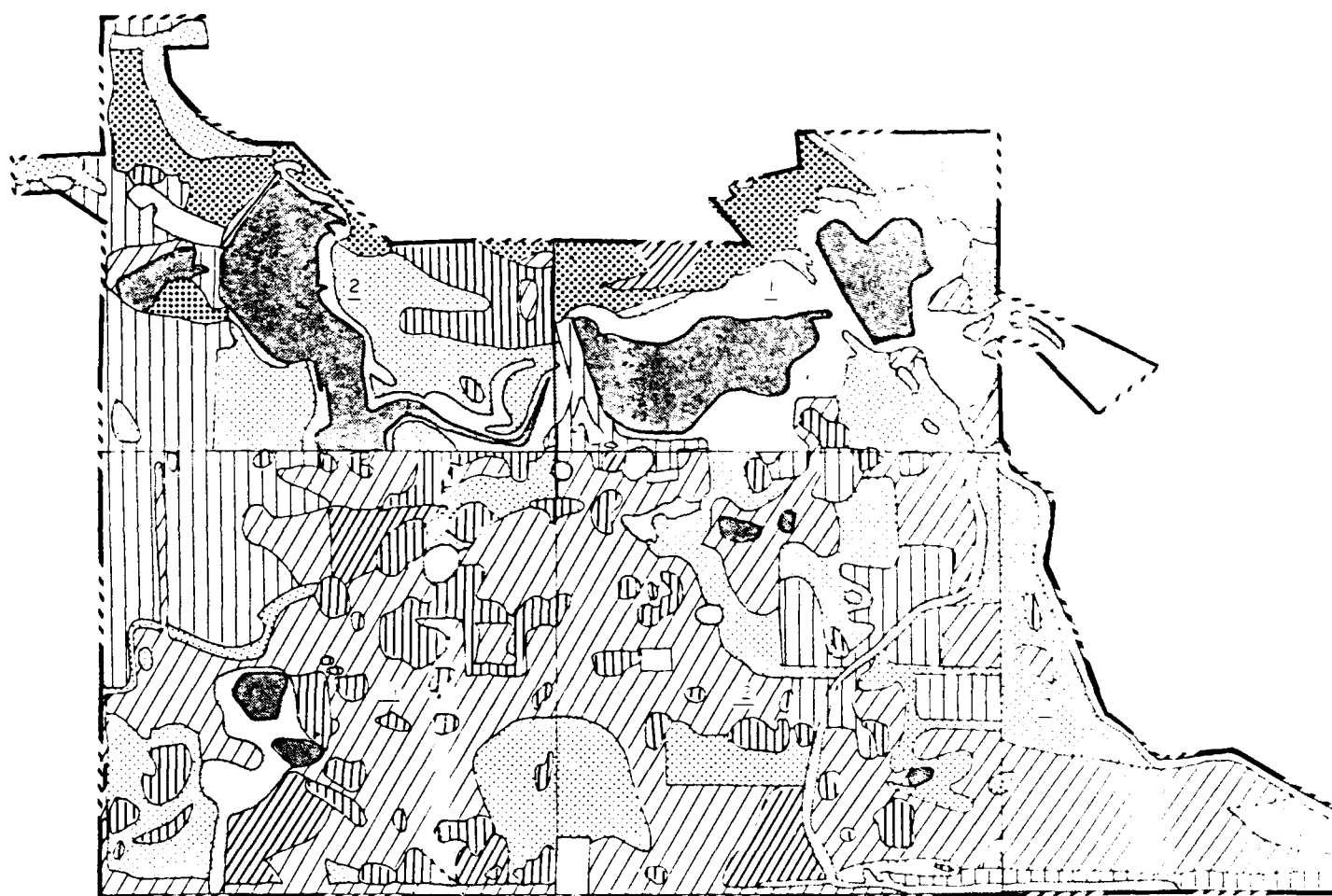
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup










FIGURE SSA I.5-20
Hydrographs of *Lake Mary*
Wells 02008 and 02050

Rocky Mountain Arsenal

Prepared by Ebasco Services Incorporated

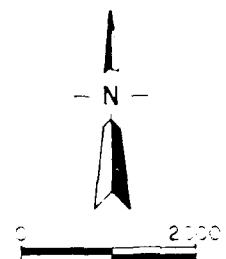
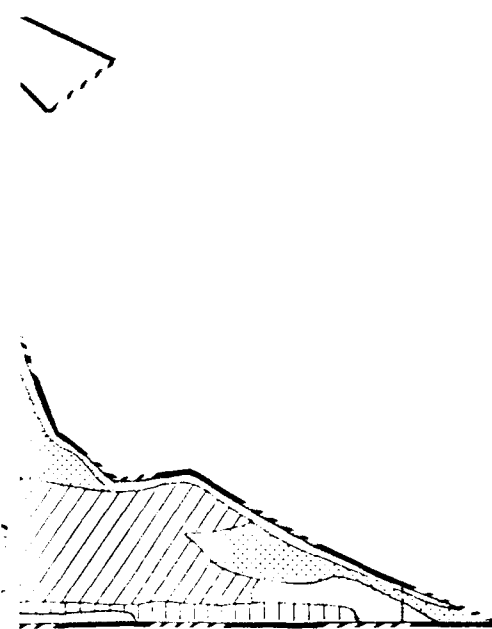


Legend

	Weedy Forb
	Cheatgrass/Weedy Forb
	Cheatgrass/Perennial Grass
	Native Perennial Grass
	Crested Wheatgrass
	Minor Vegetation Types
	Wetland/Riparian
	Water
	Unvegetated

2 Section number

--- Southern Study Area boundary



Prepared for:

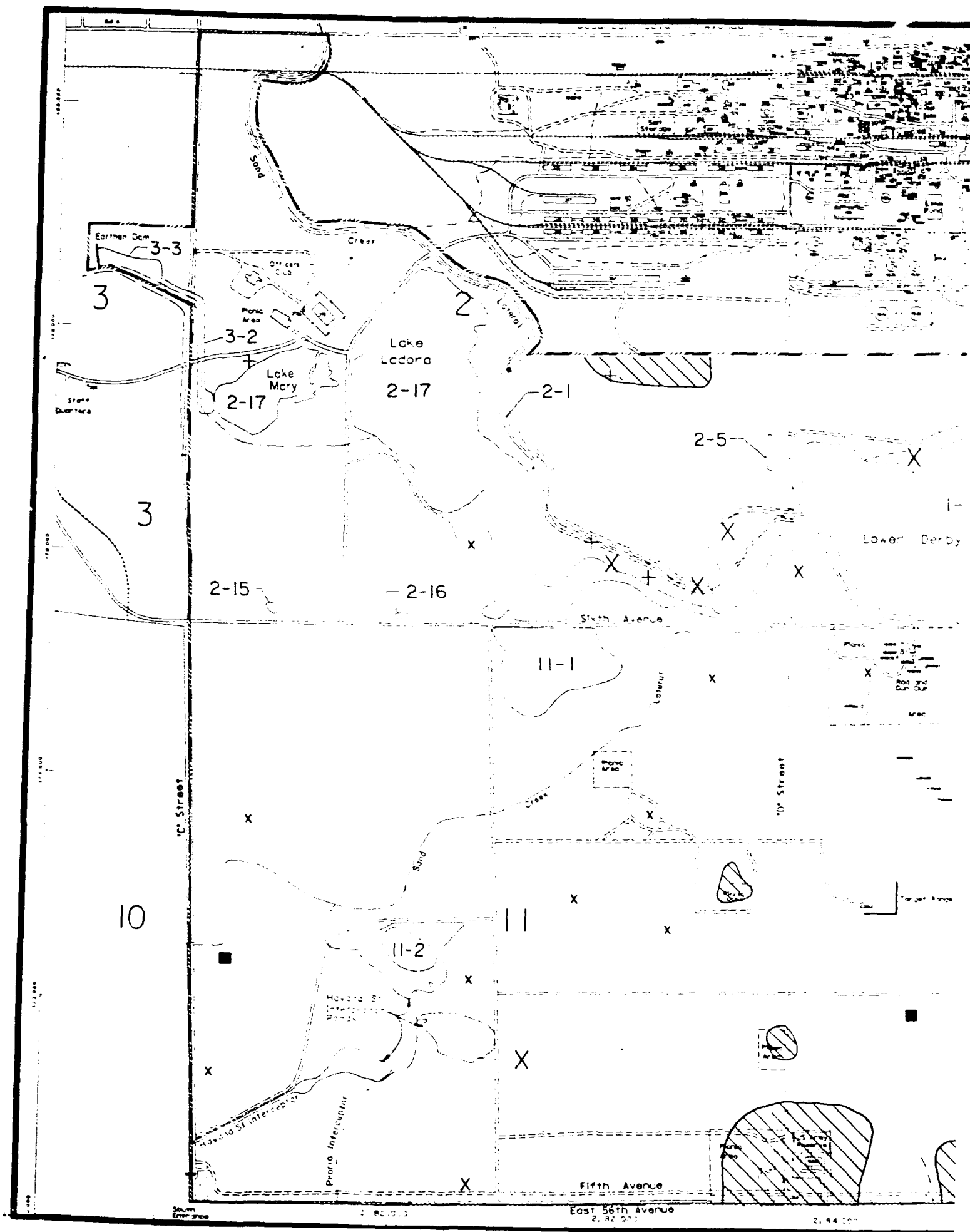
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

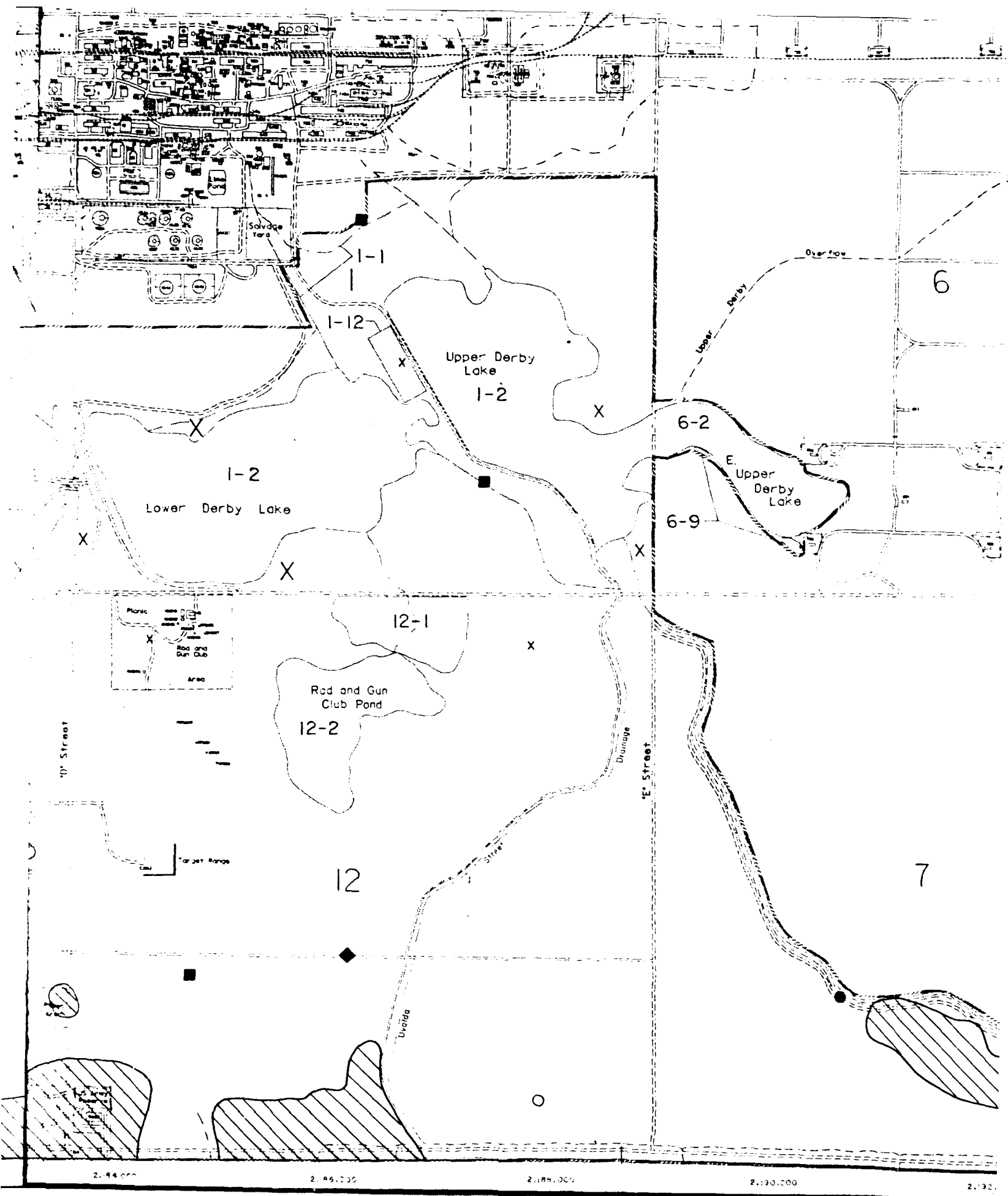
FIGURE SSA 1.6-1

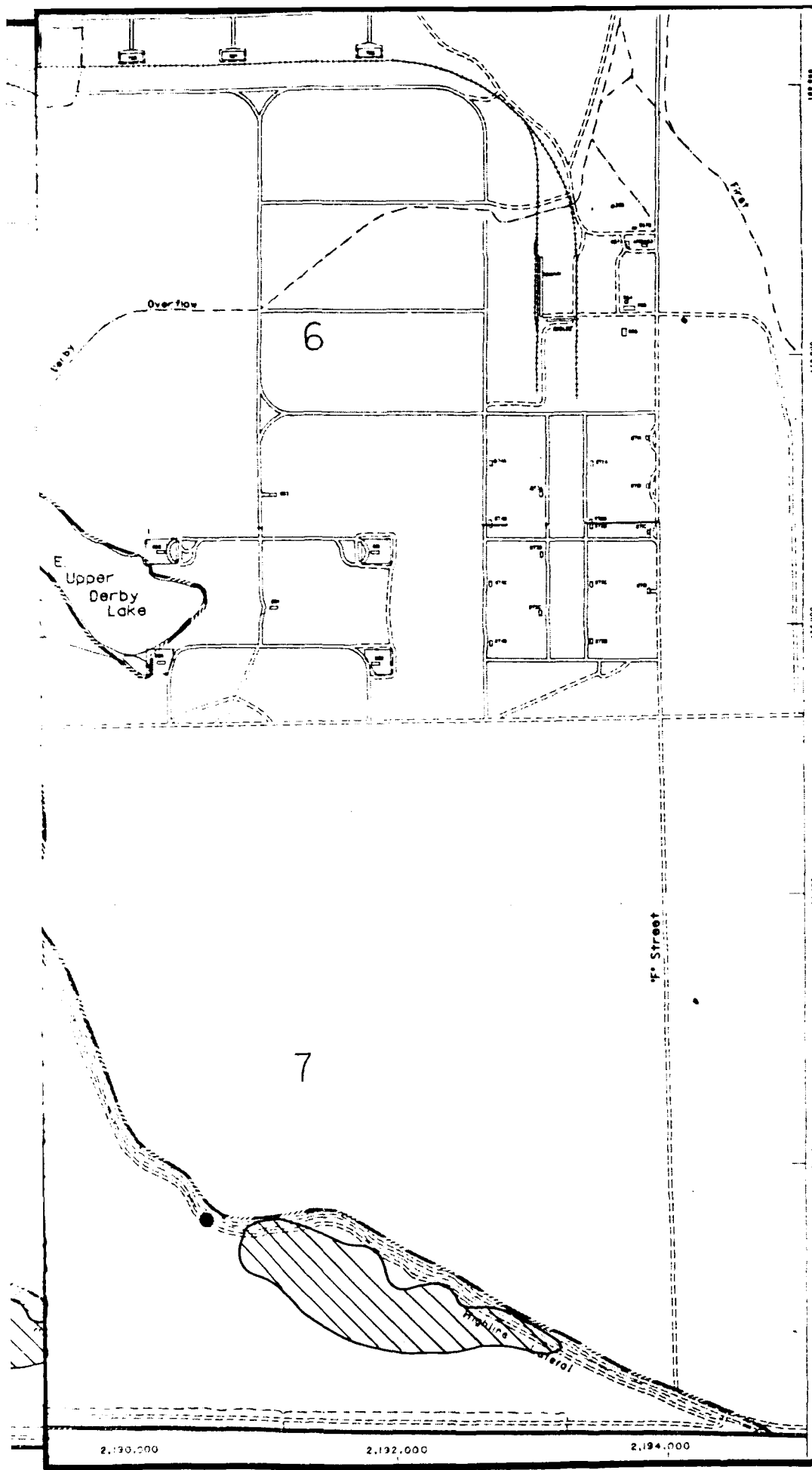
Vegetation Map
Southern Study Area

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







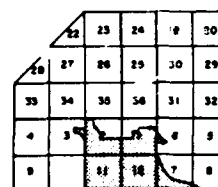
LEGEND

- Improved Road
- - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

- + BALD EAGLE FEEDING LOCATION
- * BALD EAGLE PERCH LOCATION OCCASIONALLY USED <3x
- x BALD EAGLE PERCH LOCATION MODERATELY USED 3 - 5x
- × BALD EAGLE PERCH LOCATION FREQUENTLY USED >5x
- 1986 SWAINSON'S HAWK NEST LOCATION
- 1987 SWAINSON'S HAWK NEST LOCATION
- 1987 GREAT HORNED OWL NEST LOCATION
- 1987 LONG EARED OWL NEST LOCATION
- ▨ BLACK-TAILED PRAIRIE DOG COLONIES

ROCKY MOUNTAIN ARSENAL LOCATION



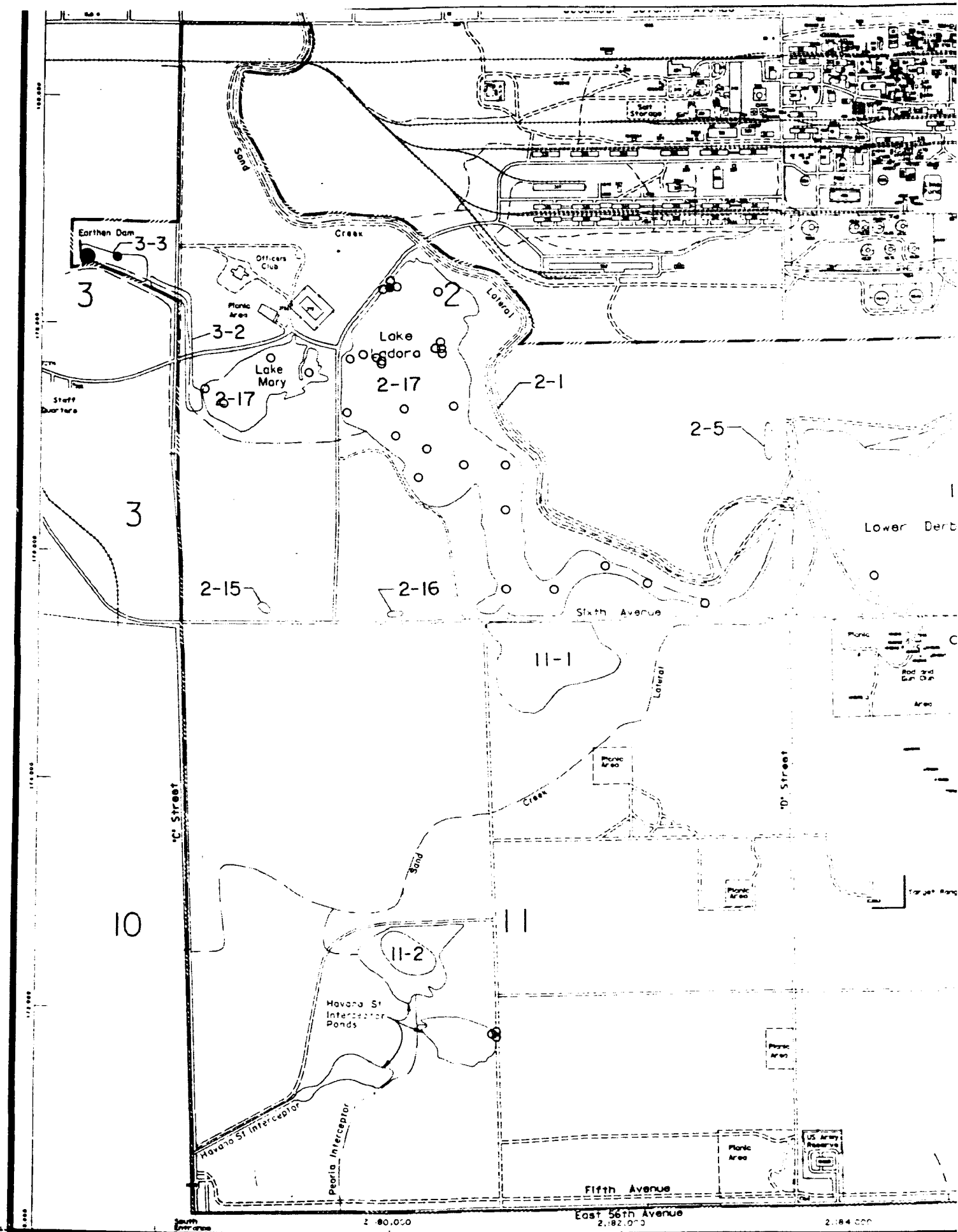
1" = 5 MILES

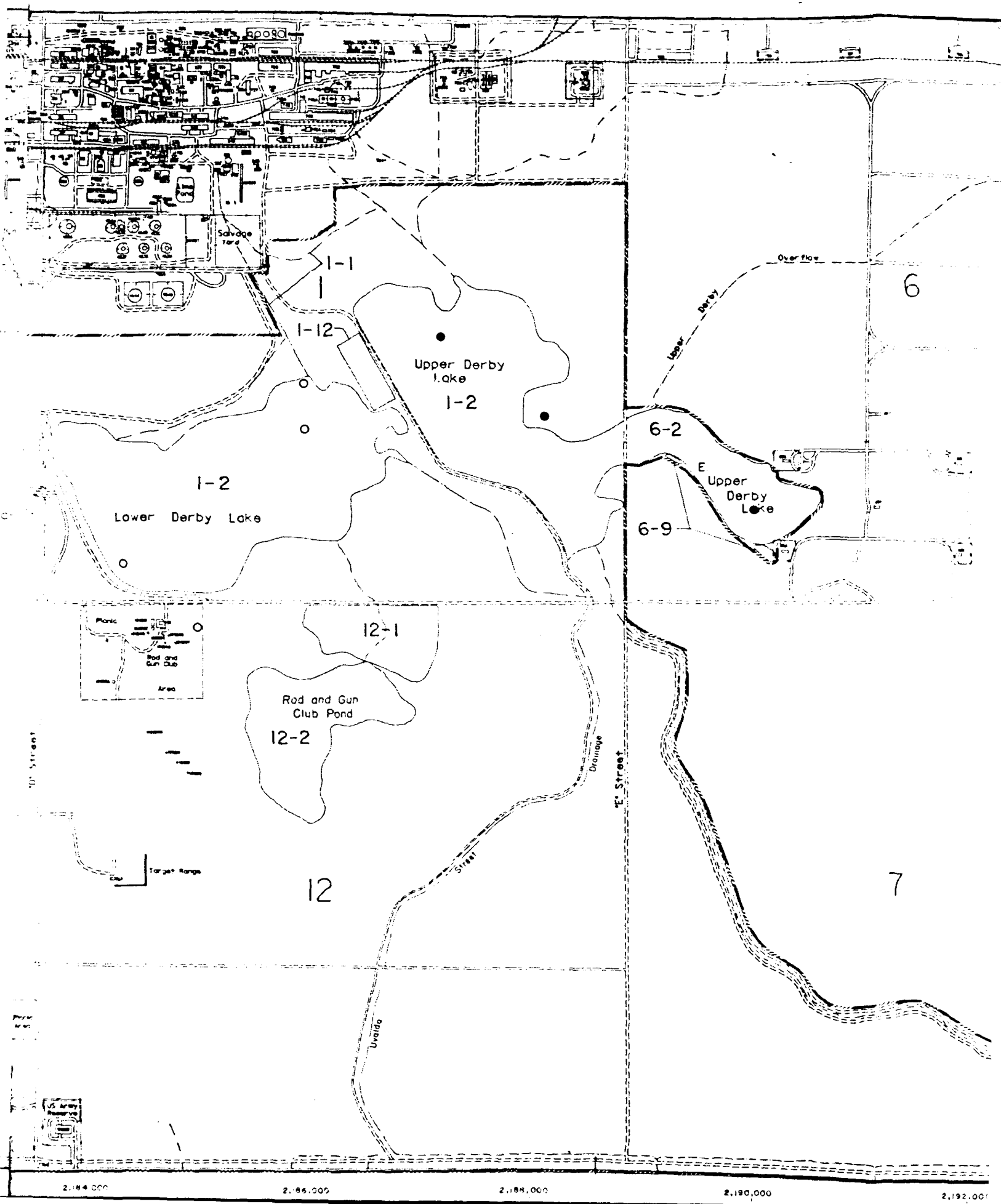
0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA I.6-2
Bald Eagle Perch and Feeding
Locations; Raptor Nests
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





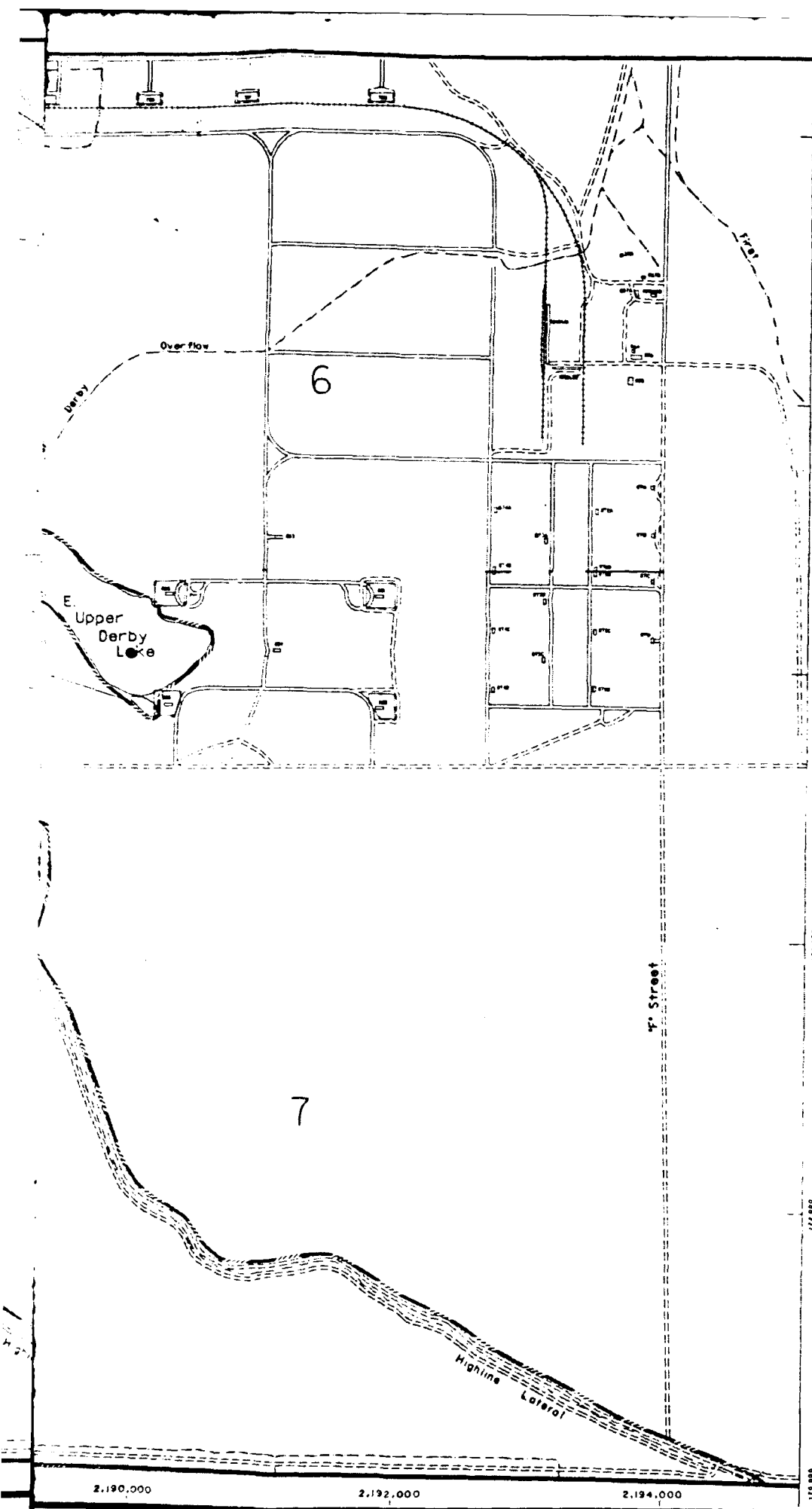
2,184,000

2,185,000

2,186,000

2,190,000

2,192,000



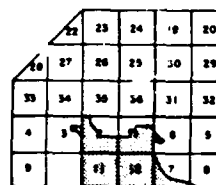
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.047-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

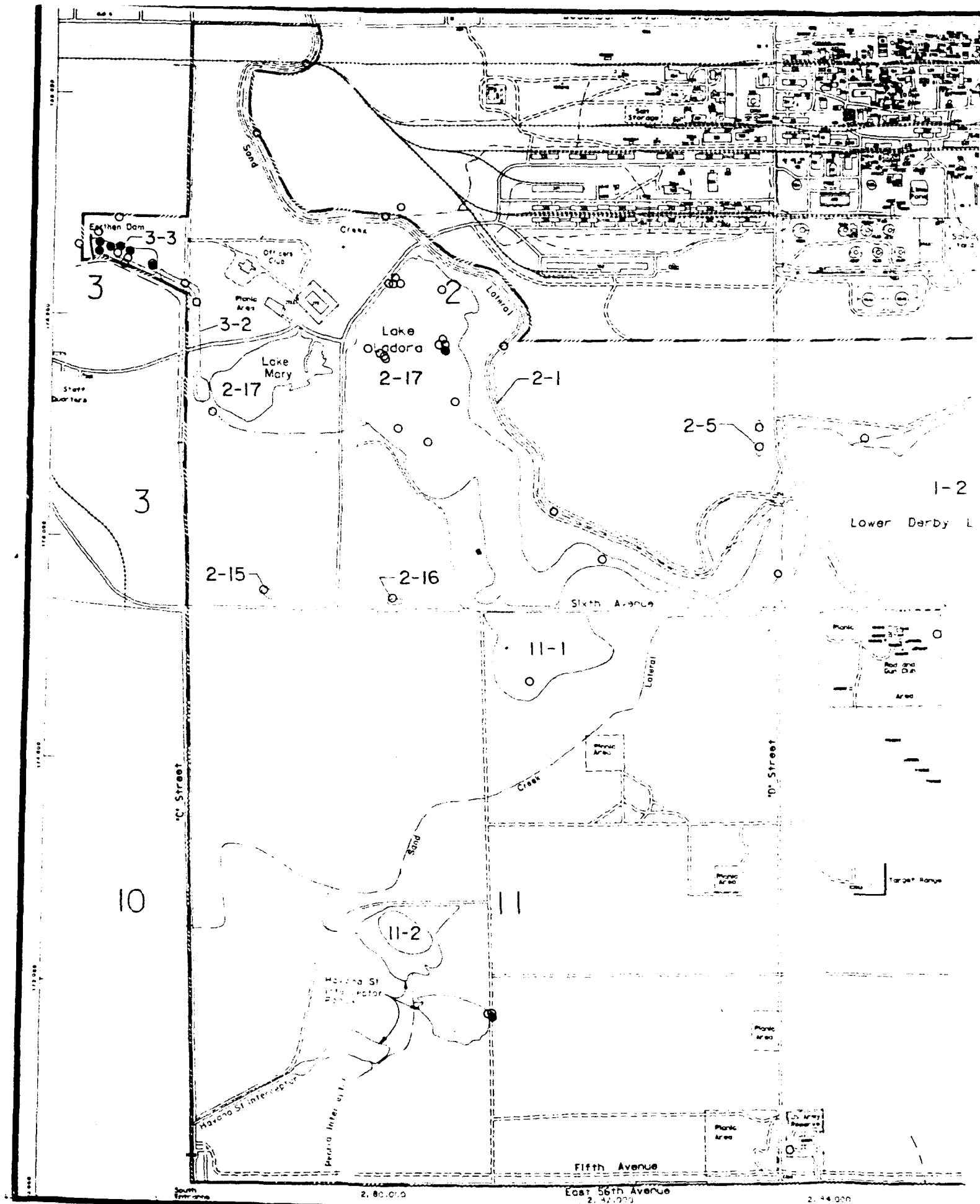


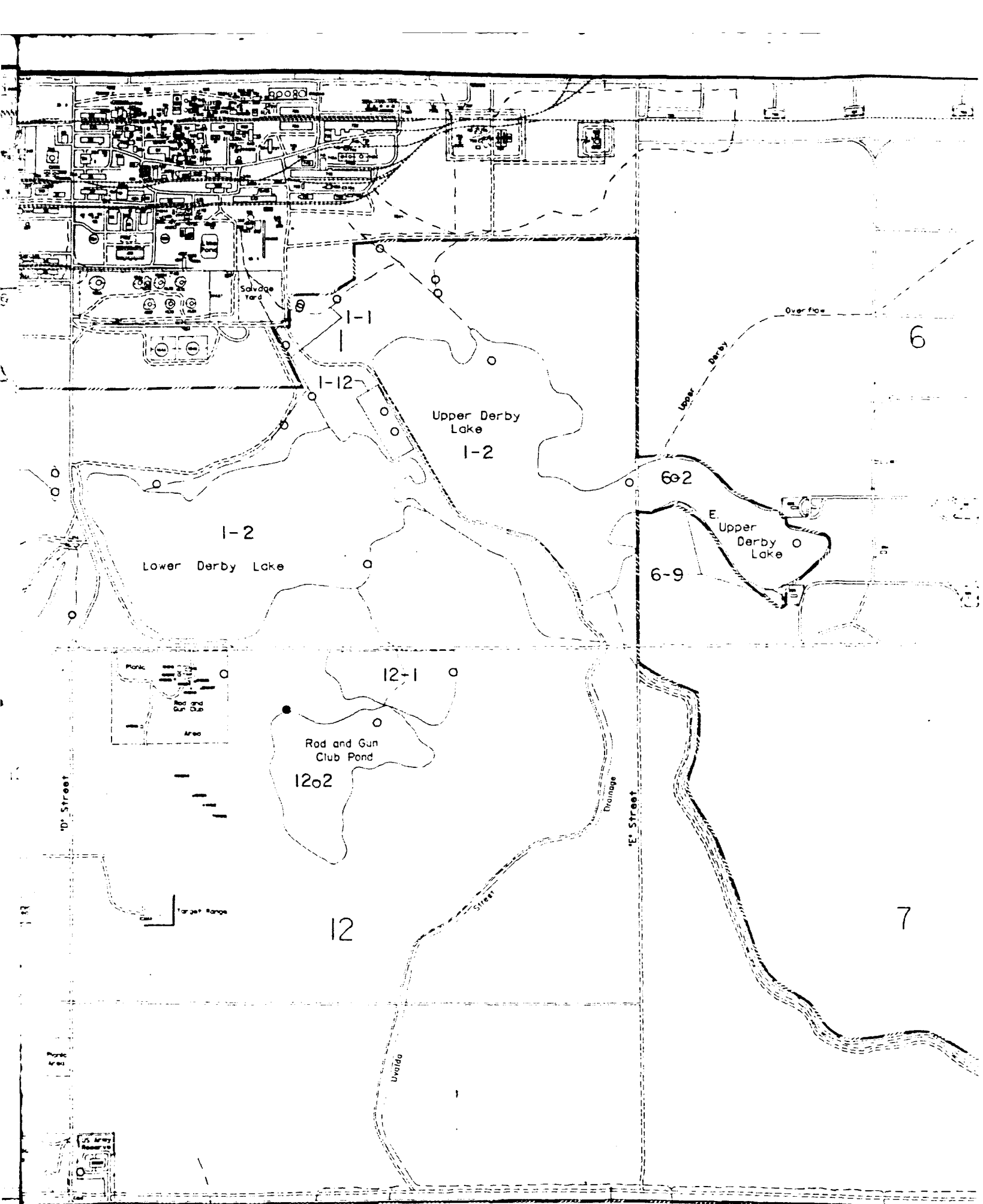
Prepared for:

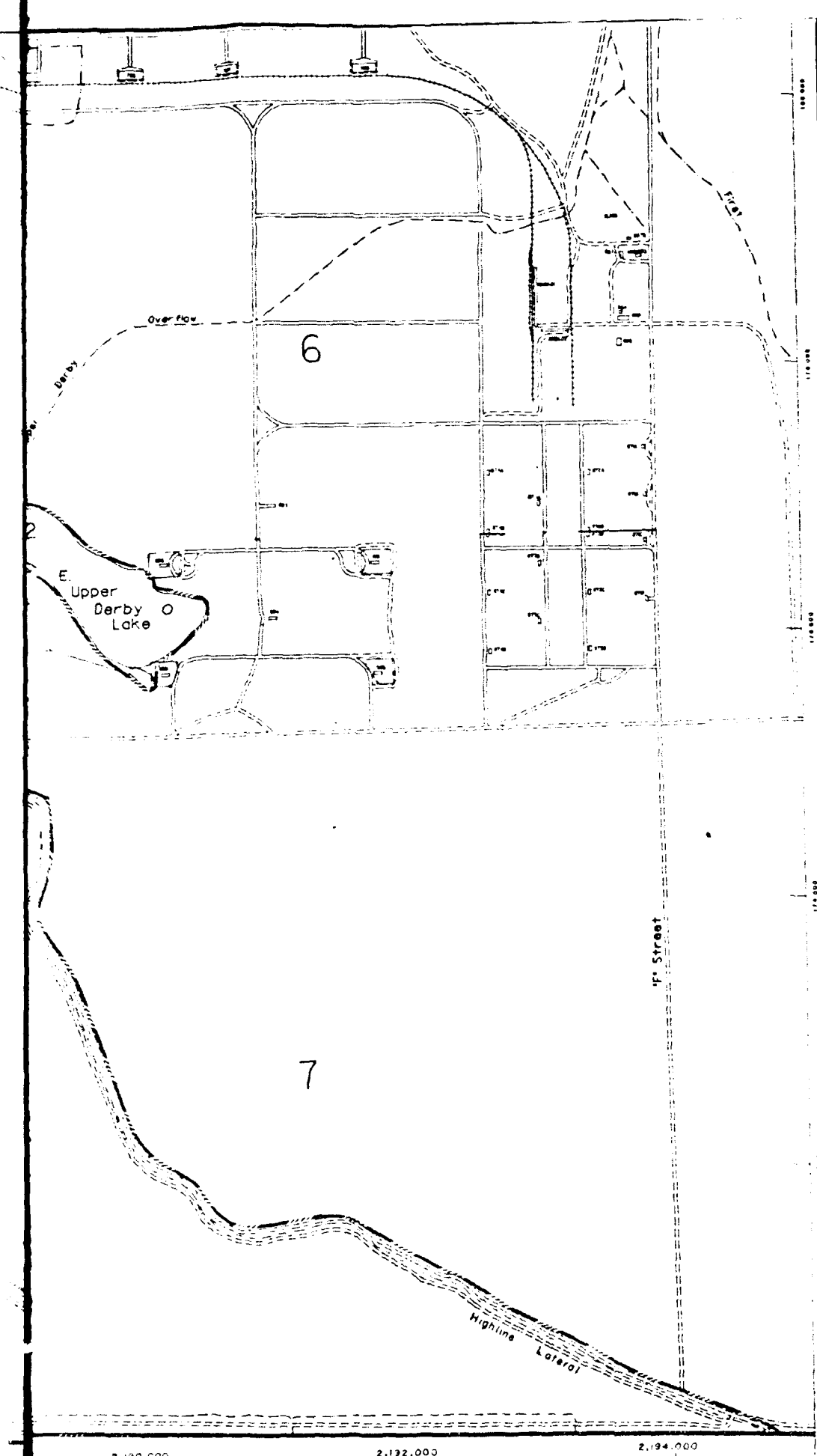
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-1
Volatile Halogenated Organics
in Soils in the 0-2 ft. Depth Interval

Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

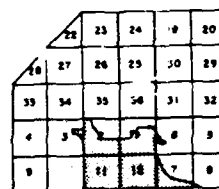
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

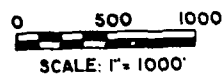
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.047 - 1.0
- > 1.0 - 10
- > 10 - 100
- > 100

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES



Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

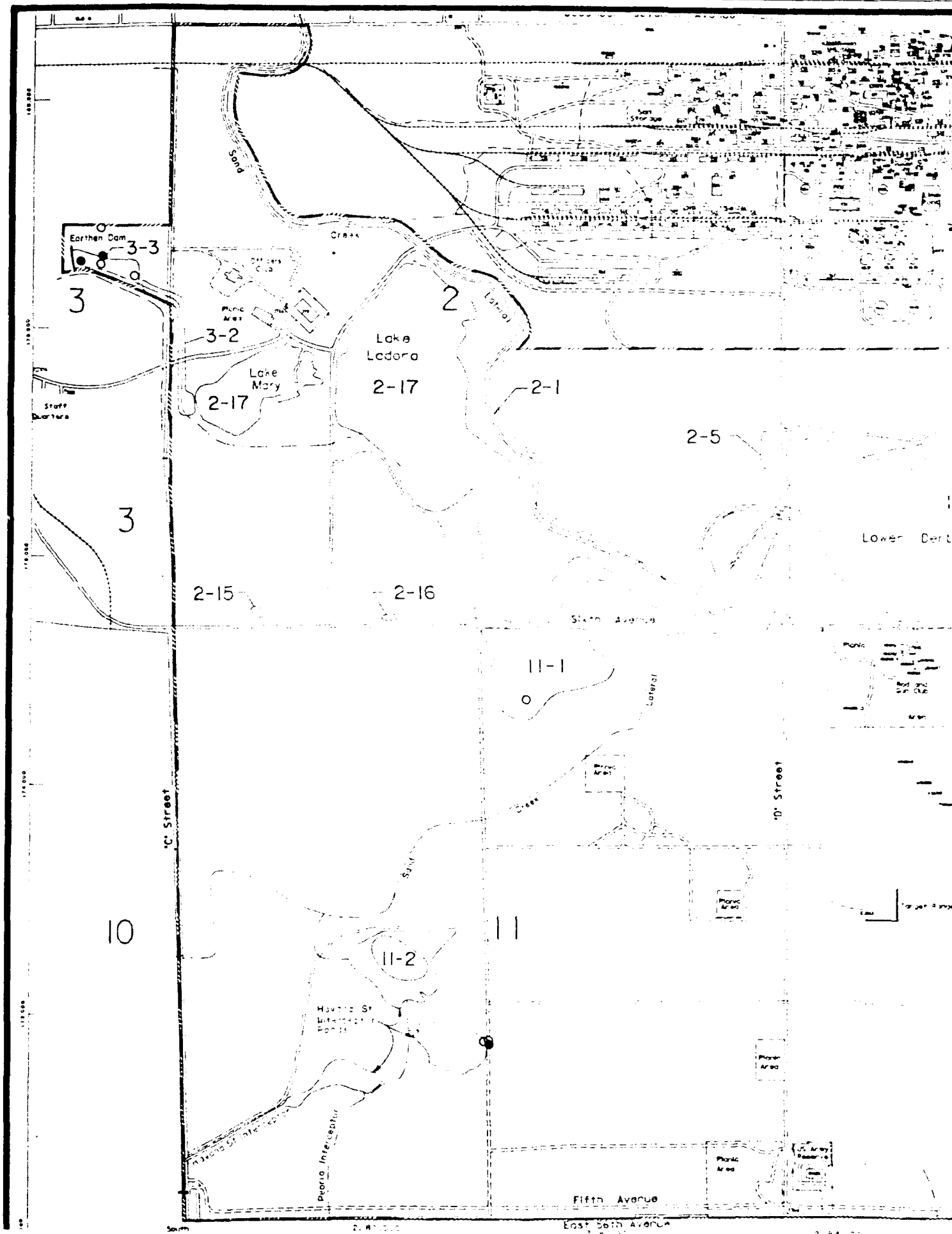
FIGURE: SSA 2.I-2

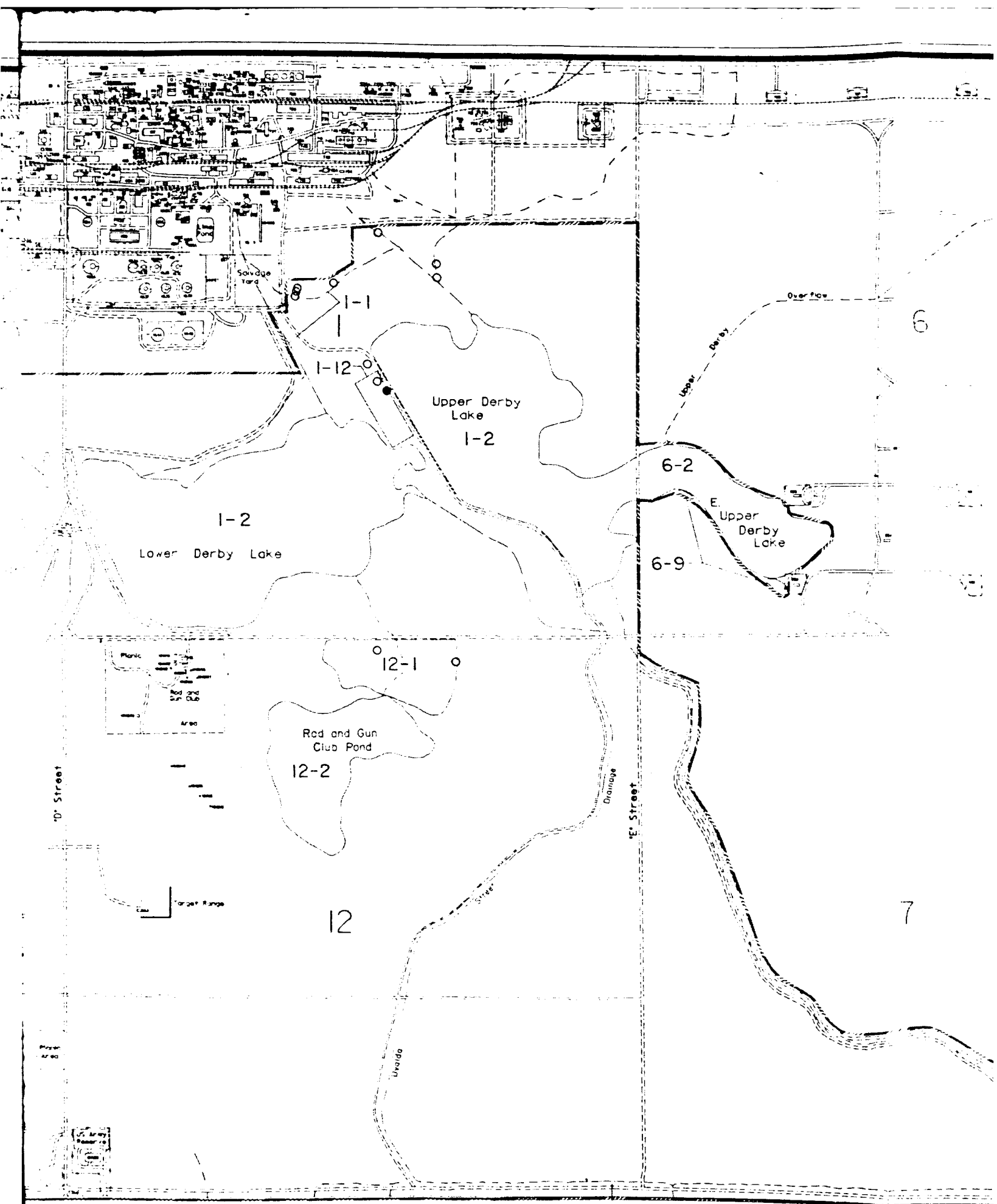
Volatile Halogenated Organics
in Soils in the 2-5 ft. Depth Interval

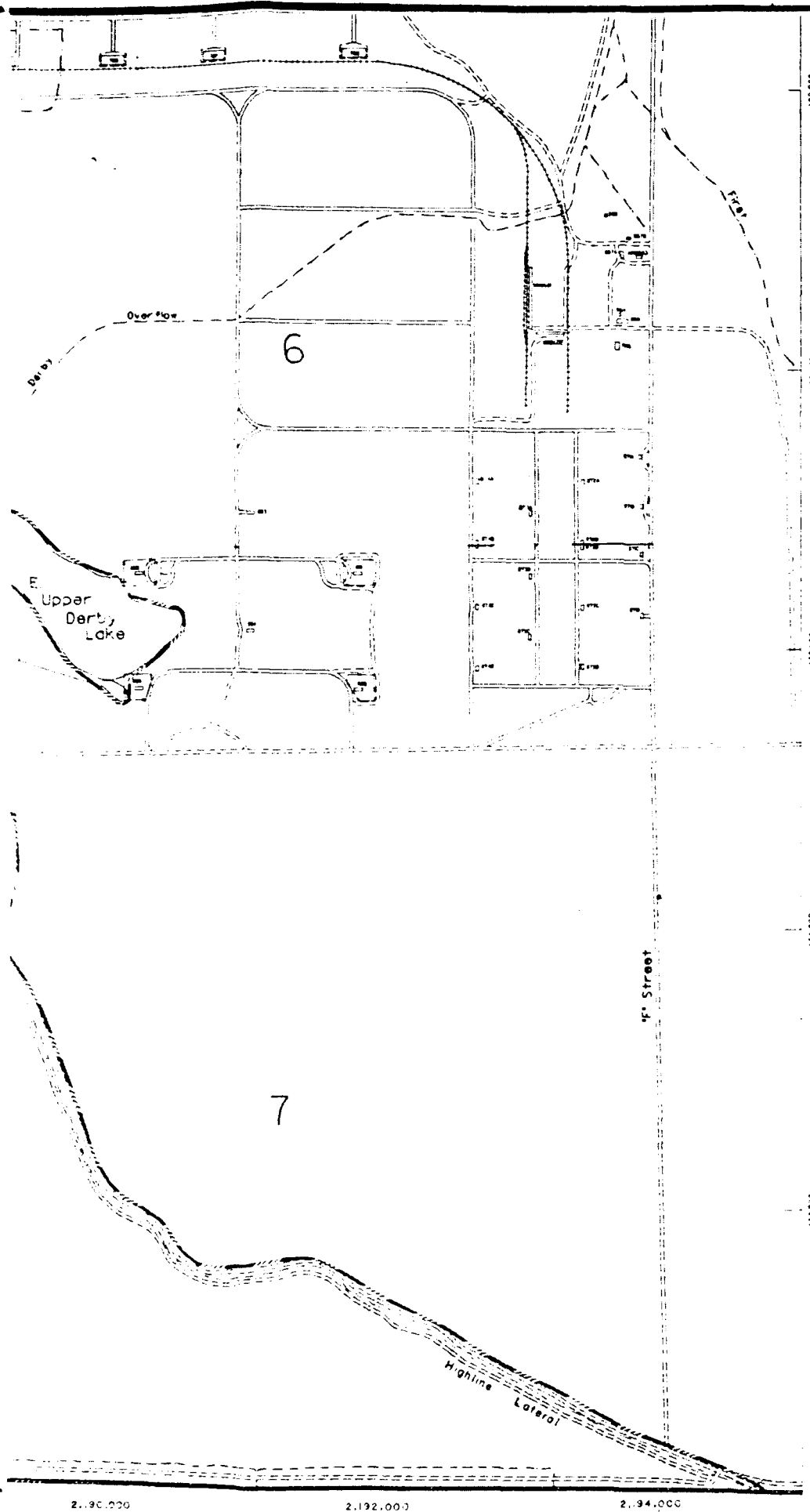
Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated





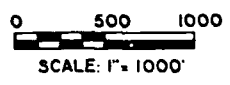
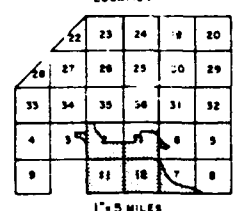


- LEGEND**
- Improved Road
 - - - Unimproved Road
 - +— Railroad Tracks
 - Existing Structure
 - Former Structure
 - Fence
 - 6** Section Number
 - - - Stream or Ditch
 - ▤ Study Area Boundary
 - 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

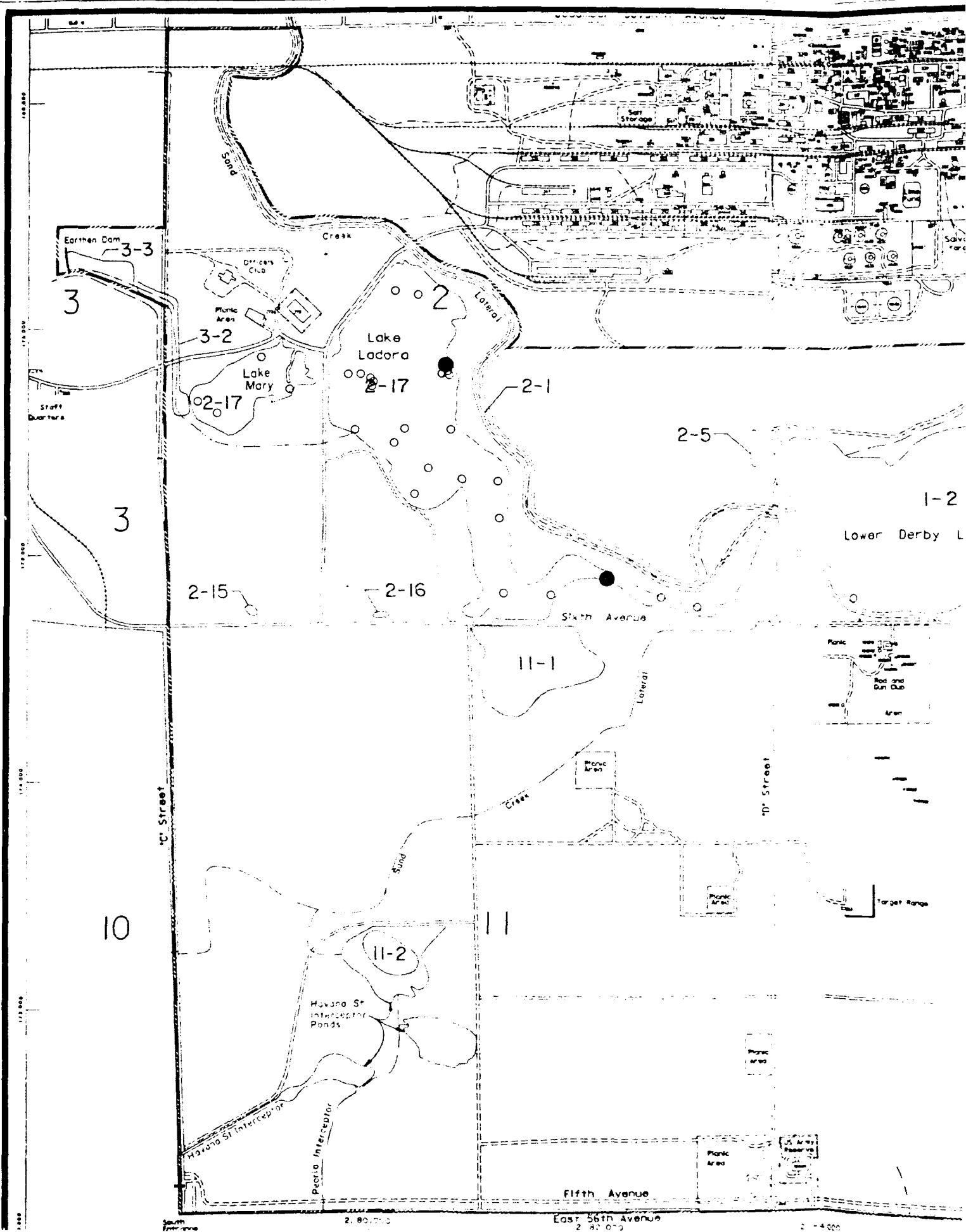
- Below Certified Reporting Limit (BCRL)
- 0.047-1.0
- >1.0-10
- >10-100
- >100

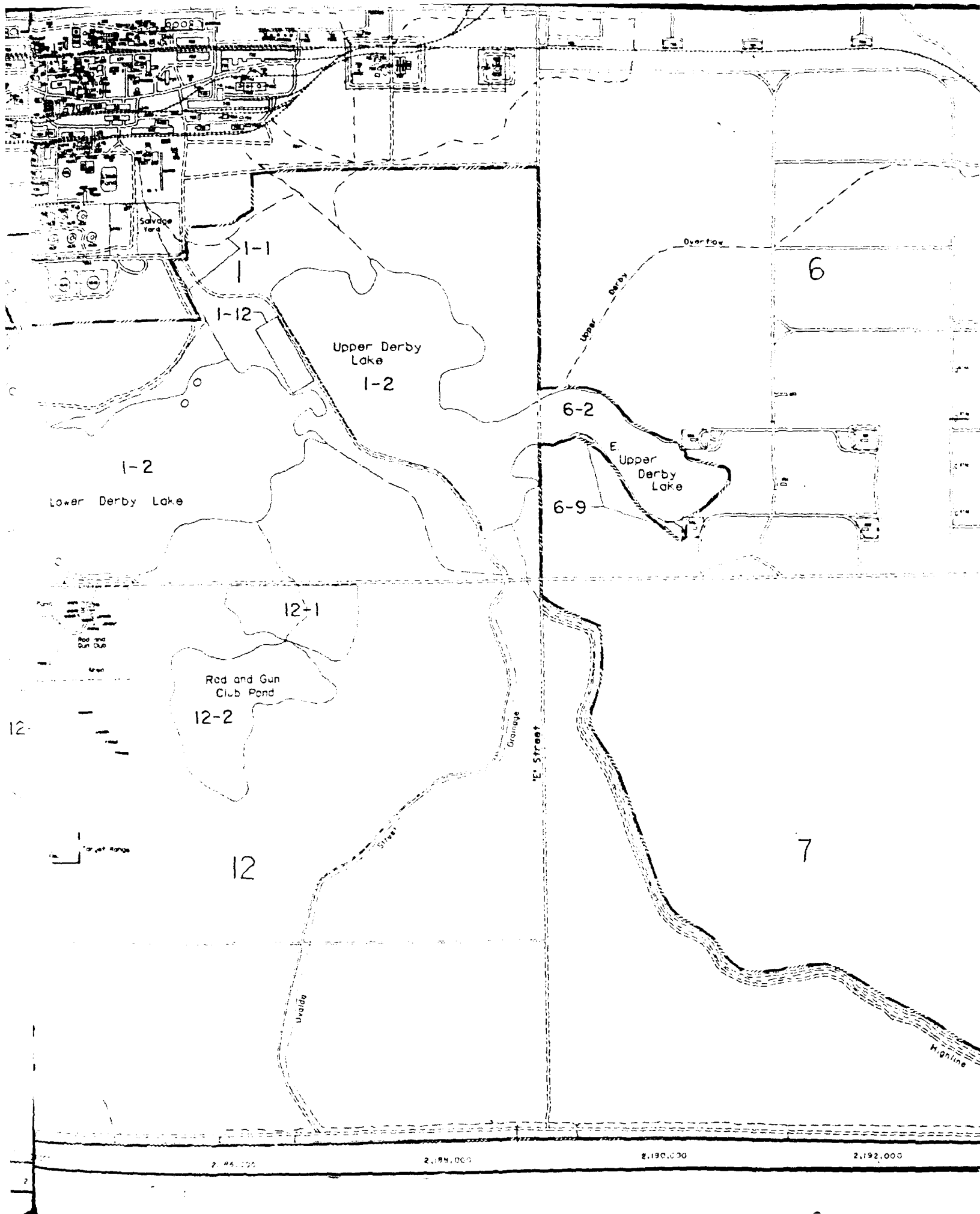
ROCKY MOUNTAIN ARSENAL LOCATION

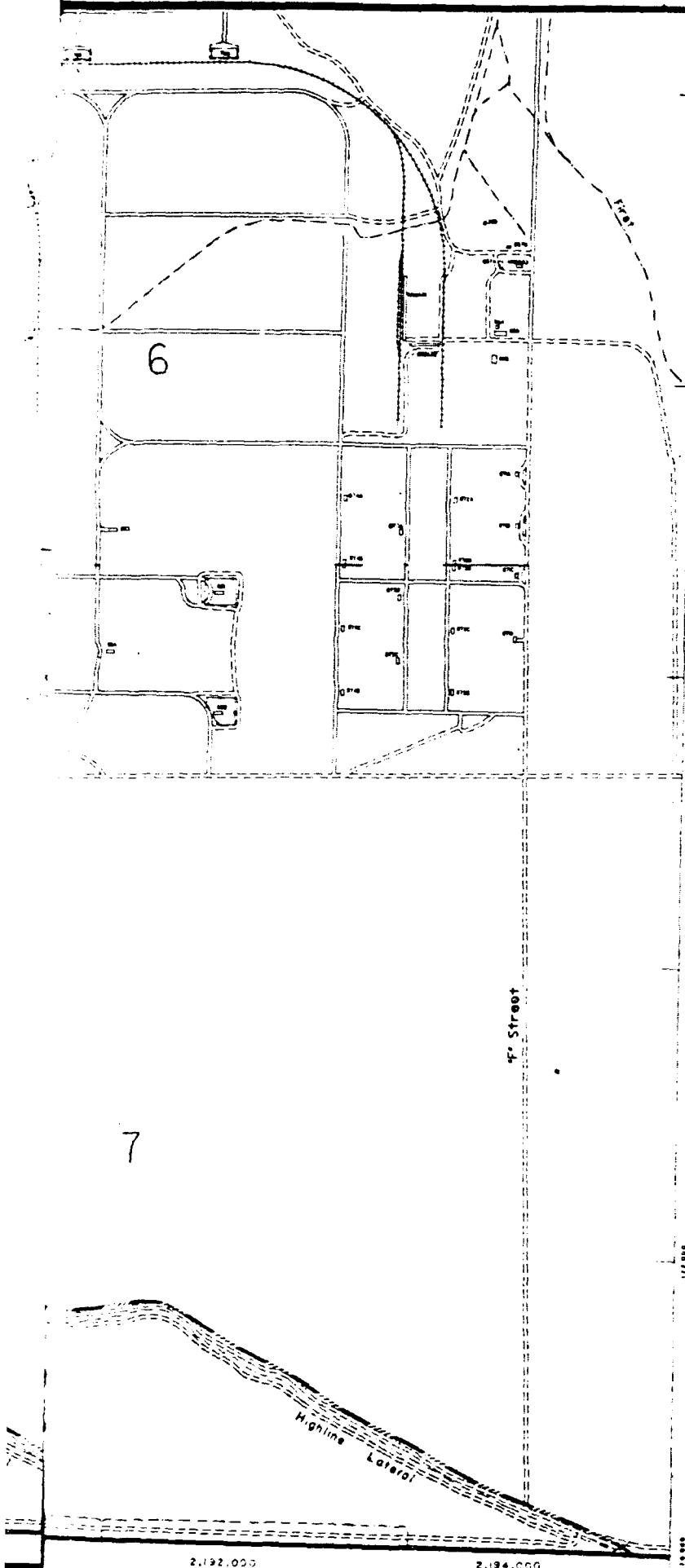


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Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2J-3
Volatile Halogenated Organics
in Soils in the 5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.15 - 1.0
- > 1.0 - 10
- > 10 - 100
- > 100

ROCKY MOUNTAIN ARSENAL LOCATION



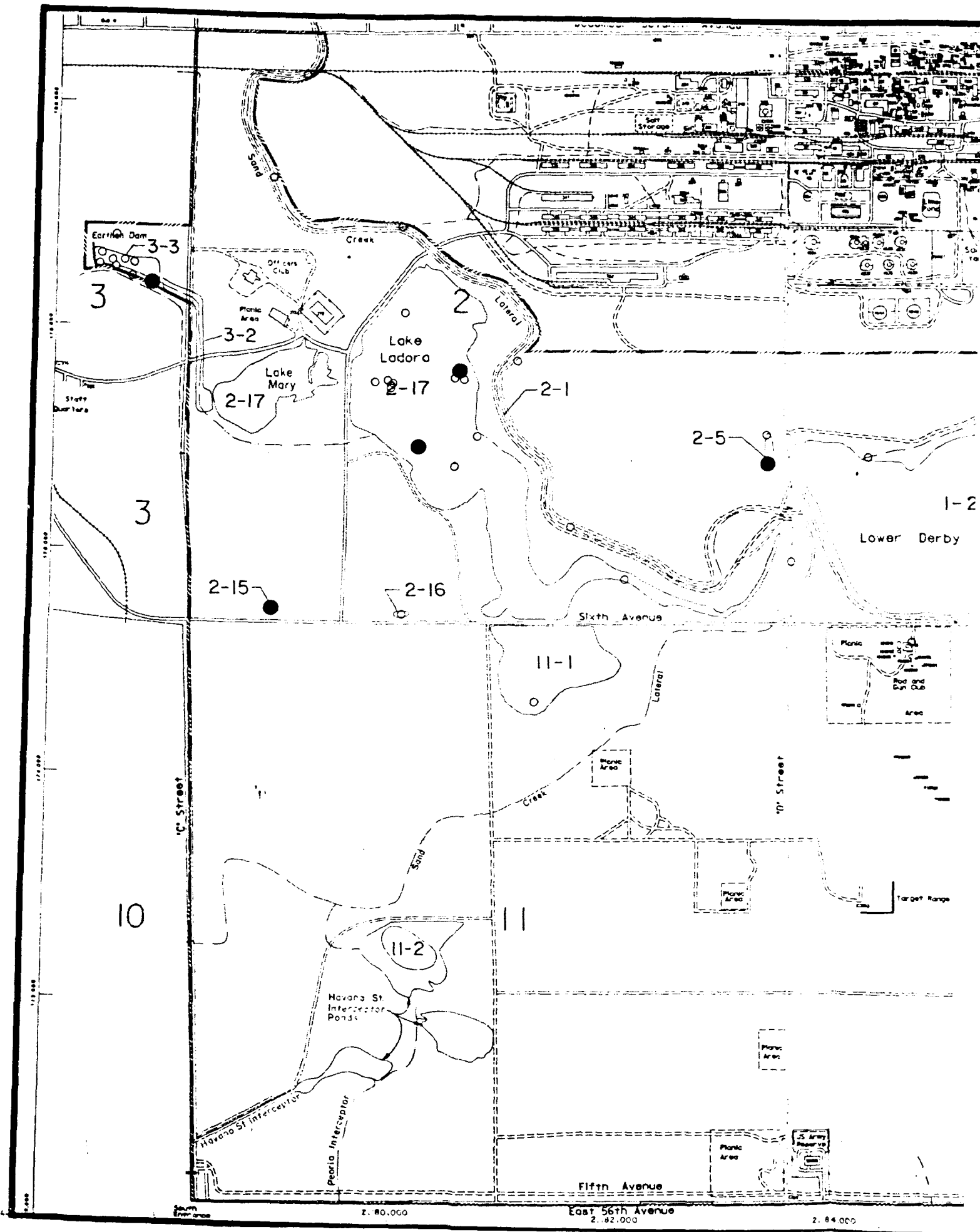
1" = 5 MILES

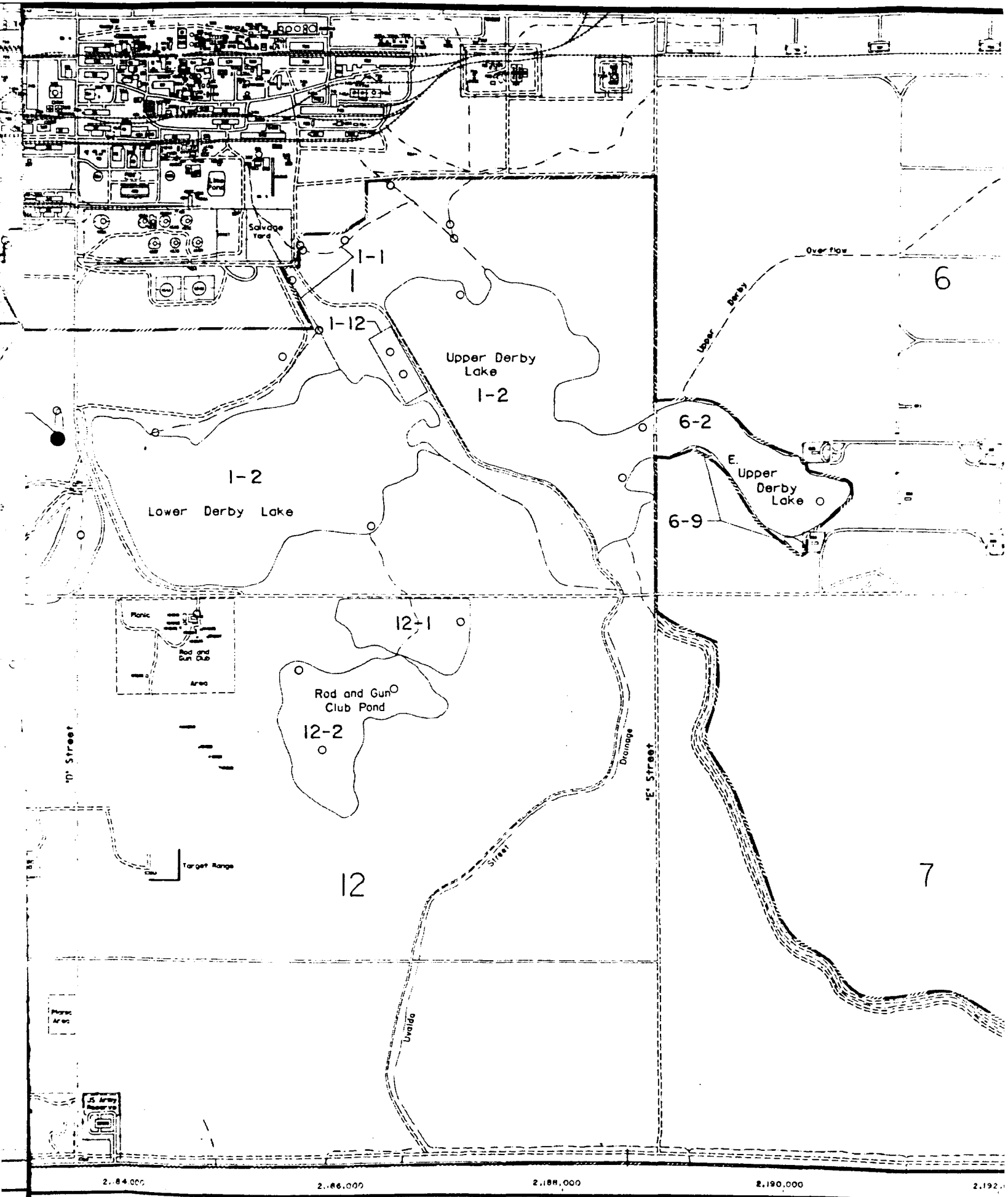
0 500 1000
SCALE: 1" = 1000'

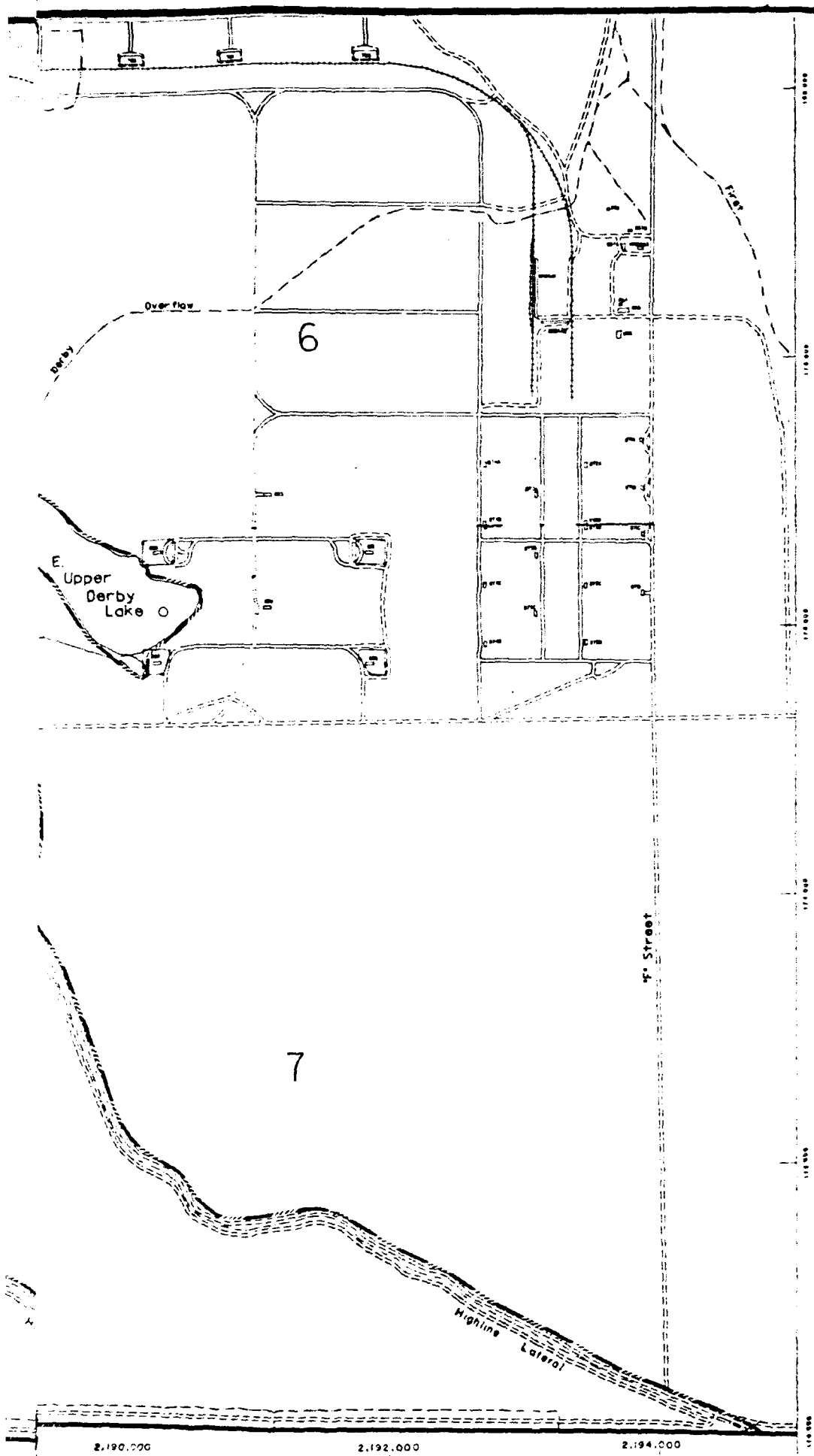
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-4
Methylene Chloride in Soils in the
0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

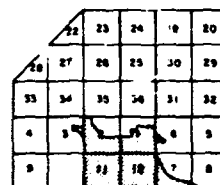
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

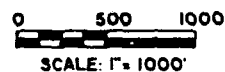
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.15-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES



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Program Manager's Office for
Rocky Mountain Arsenal Cleanup

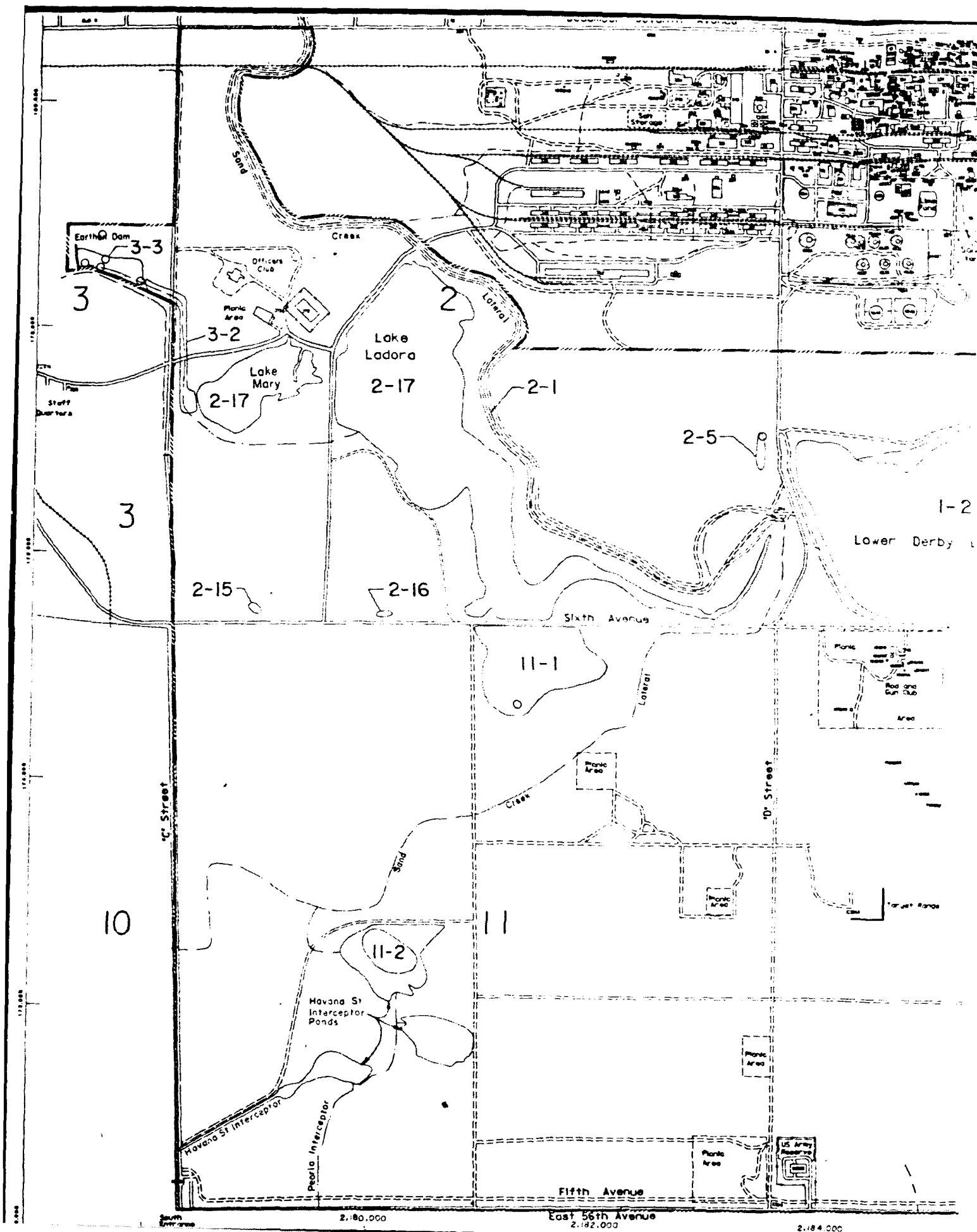
FIGURE: SSA 2.1-5

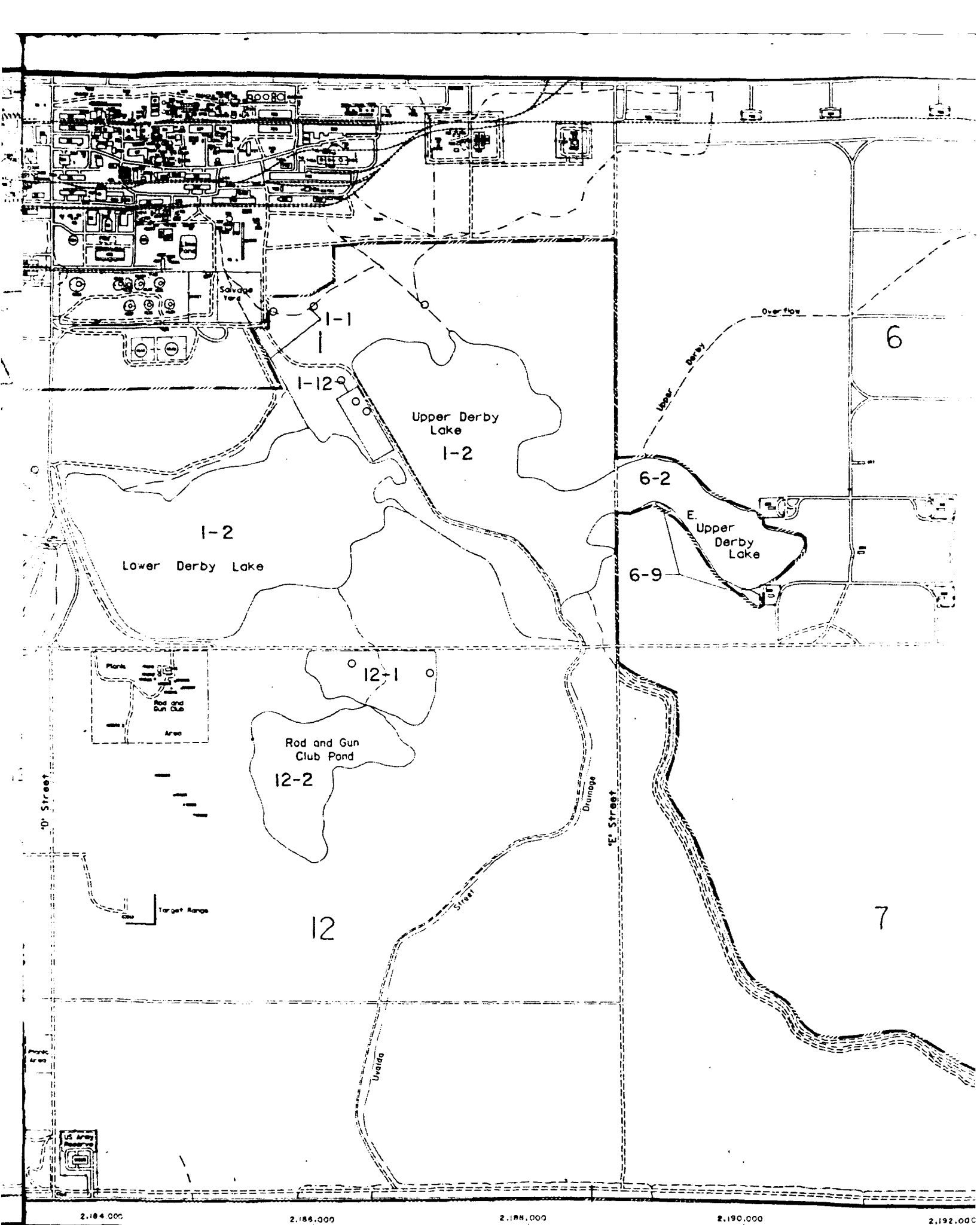
Methylene Chloride in Soils in the
2-5 ft. Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated





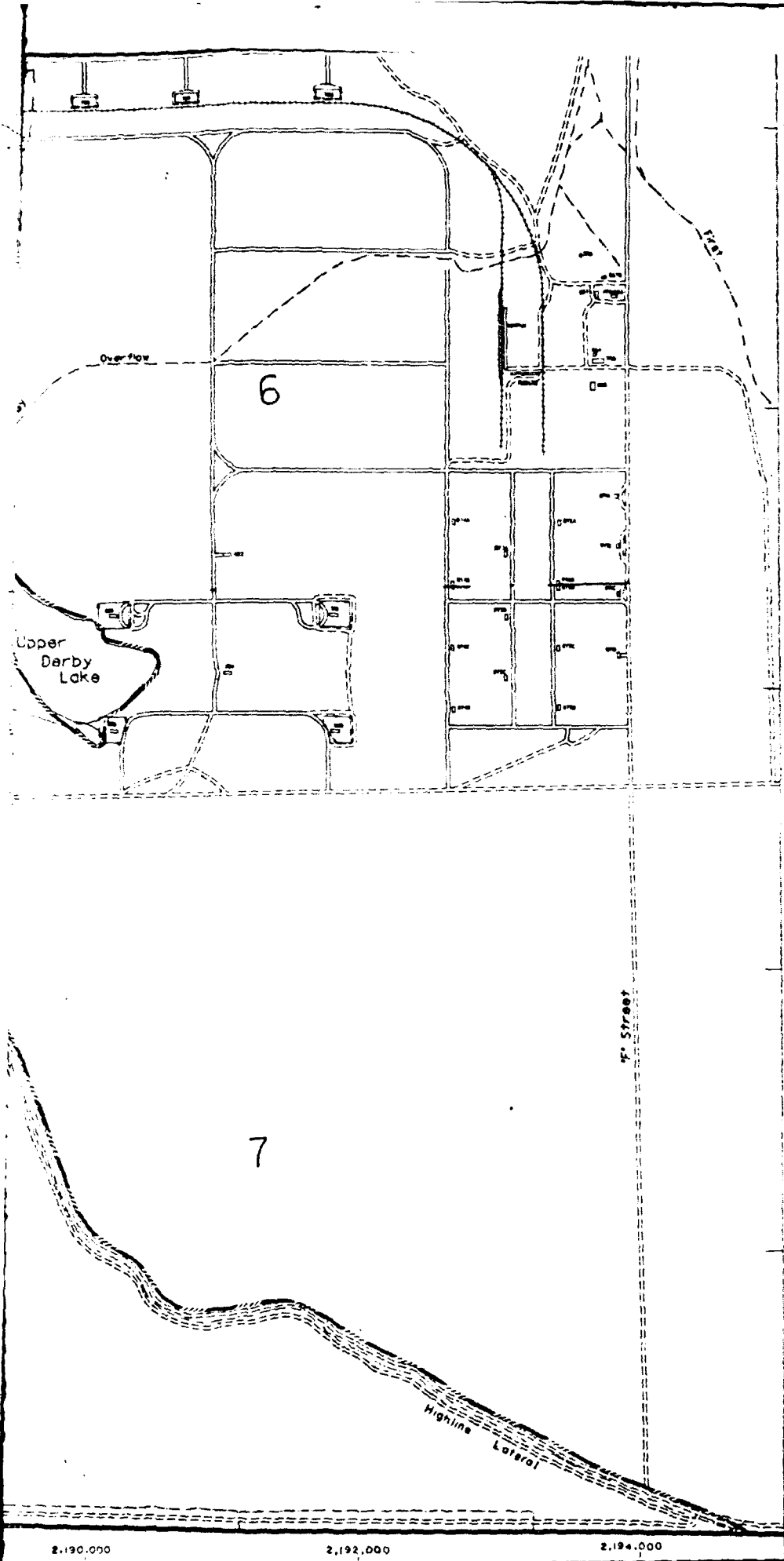
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



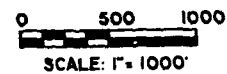
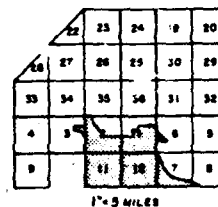
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.15 - 1.0
- >1.0 - 10
- >10 - 100
- > 100

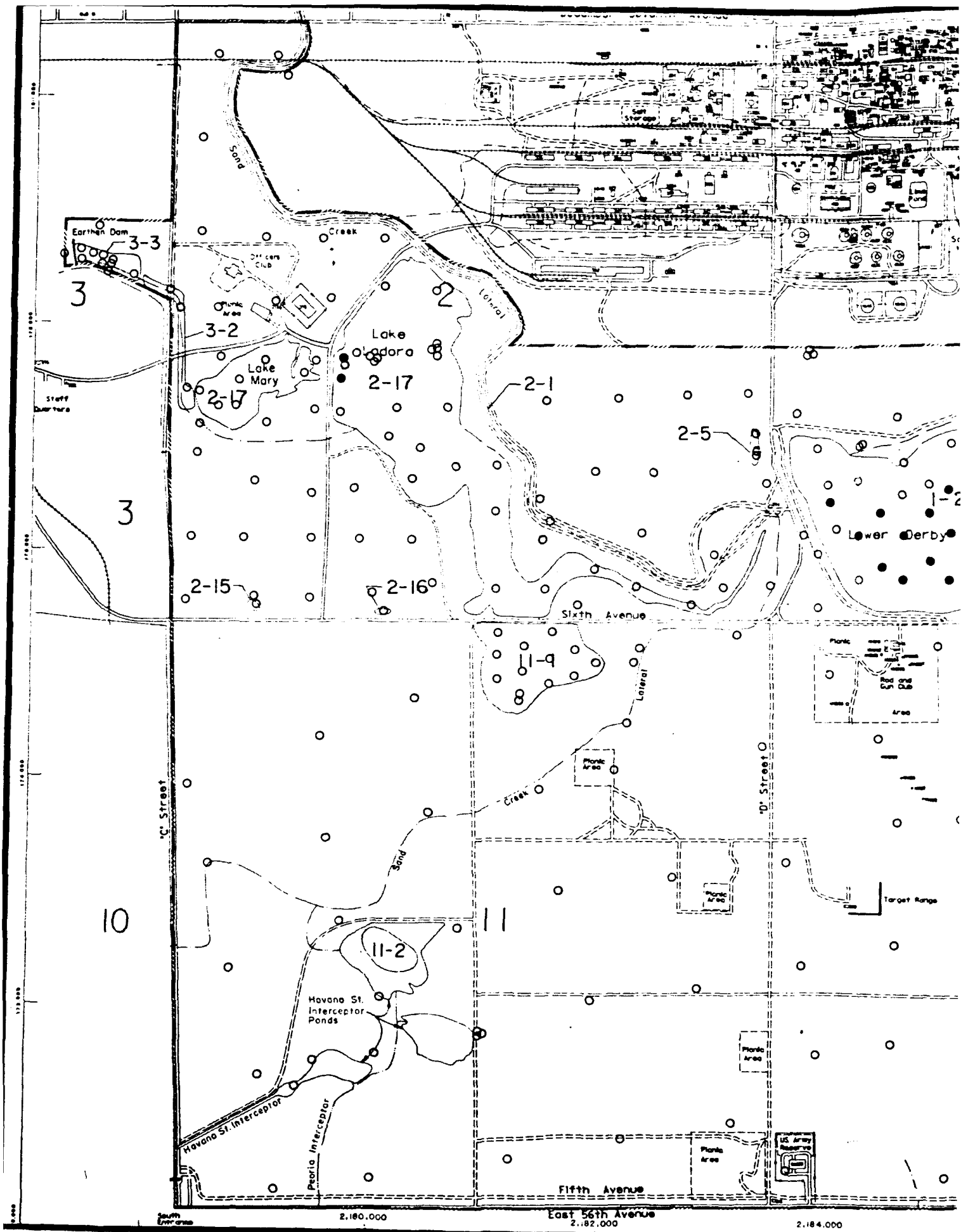
ROCKY MOUNTAIN ARSENAL LOCATION

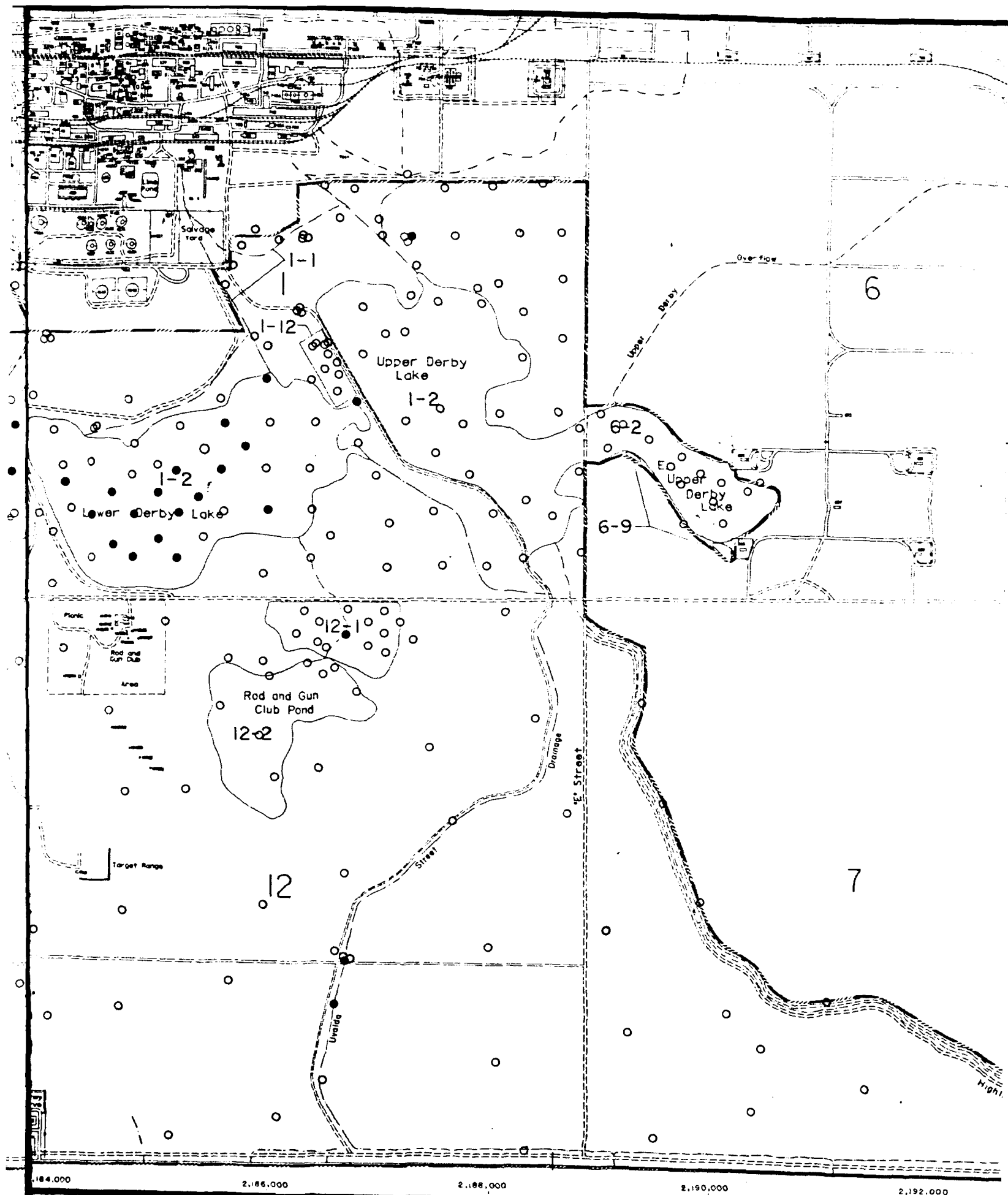


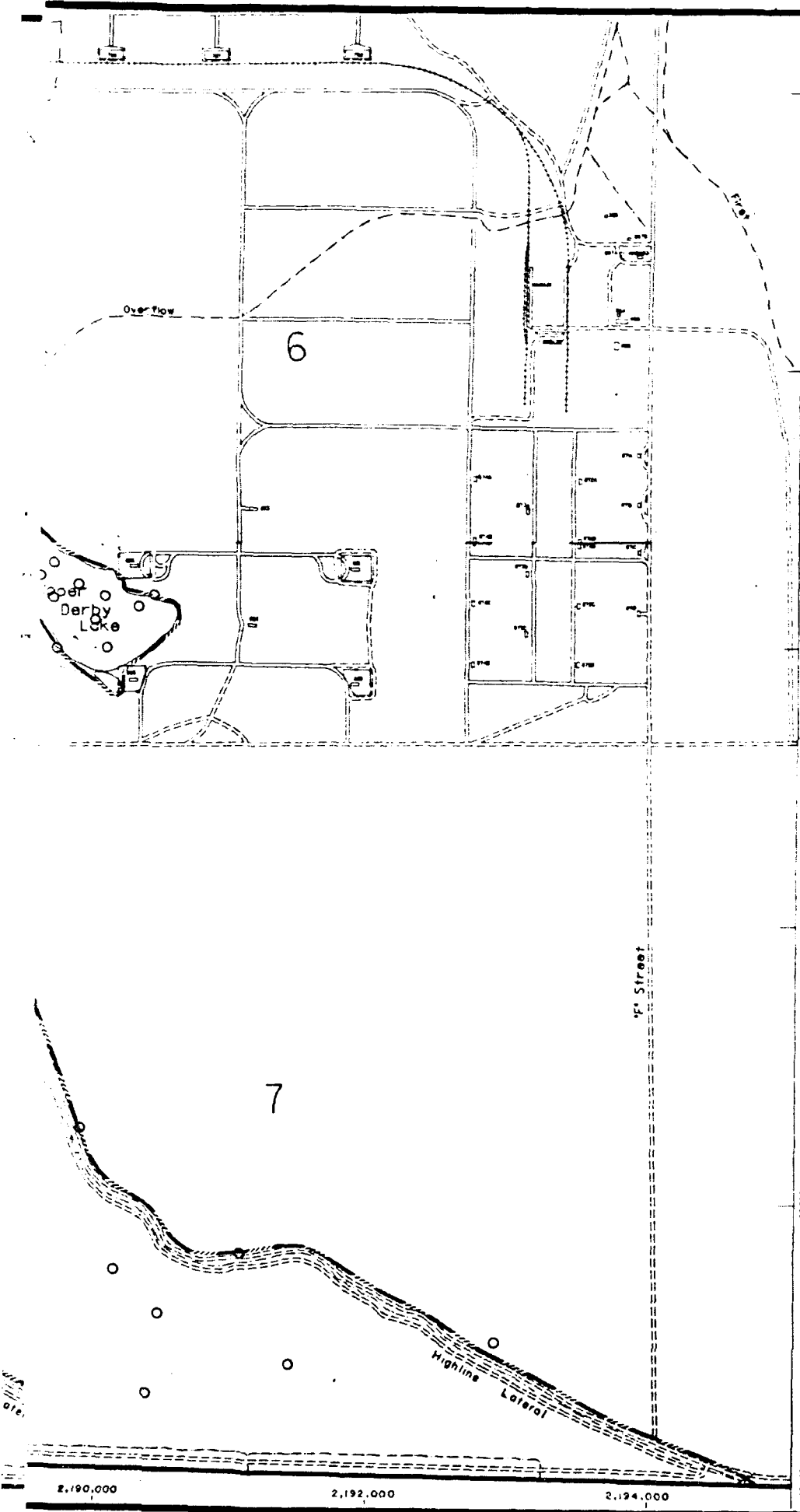
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-6
Methylene Chloride in Soils in the
5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated

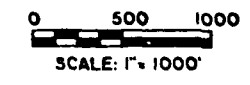
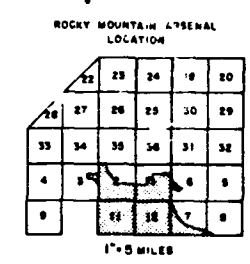






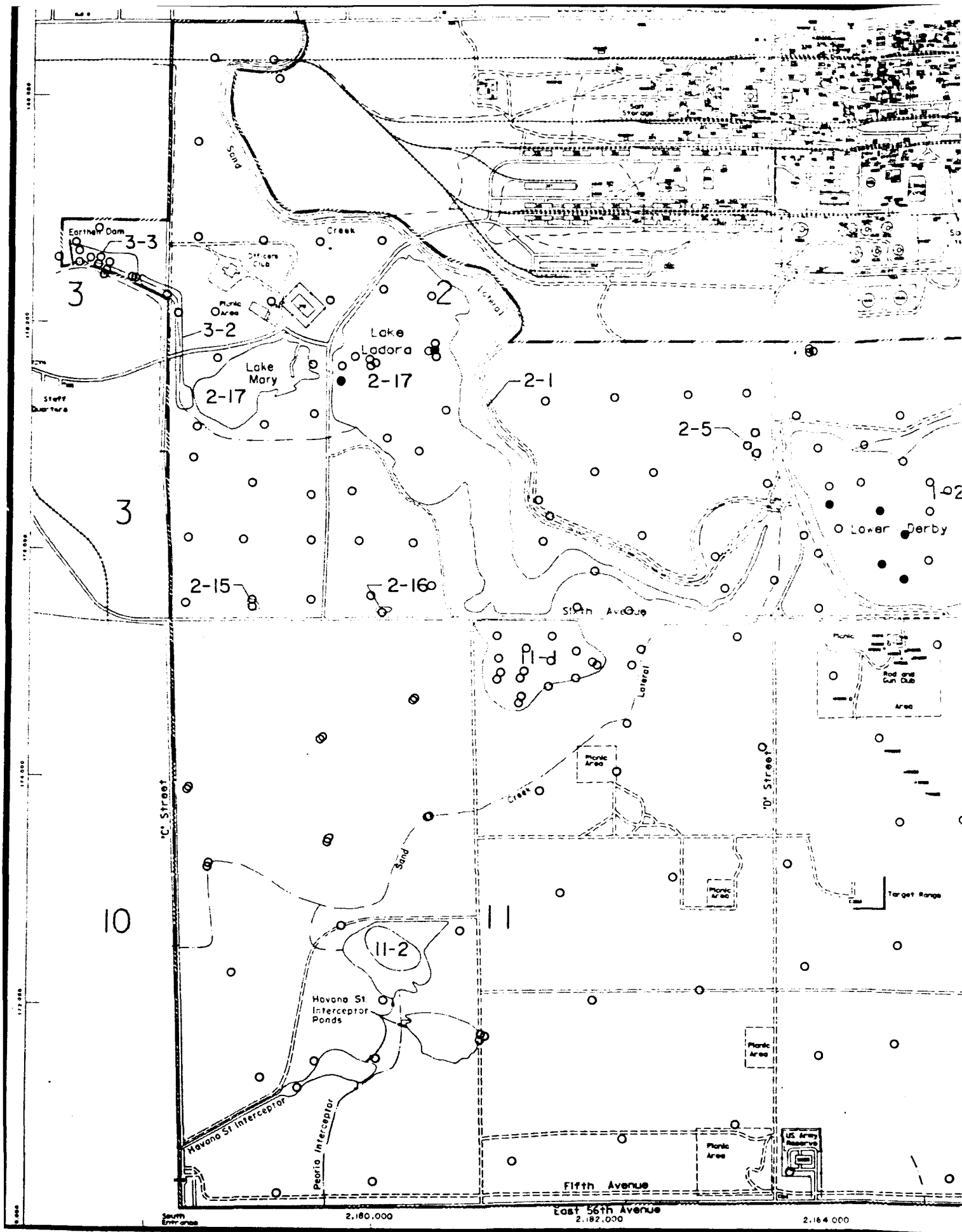
- LEGEND**
- Improved Road
 - - - Unimproved Road
 - +— Railroad Tracks
 - Existing Structure
 - Former Structure
 - Fence
 - 6** Section Number
 - Stream or Ditch
 - Study Area Boundary
 - 174,000 State Plane Grid

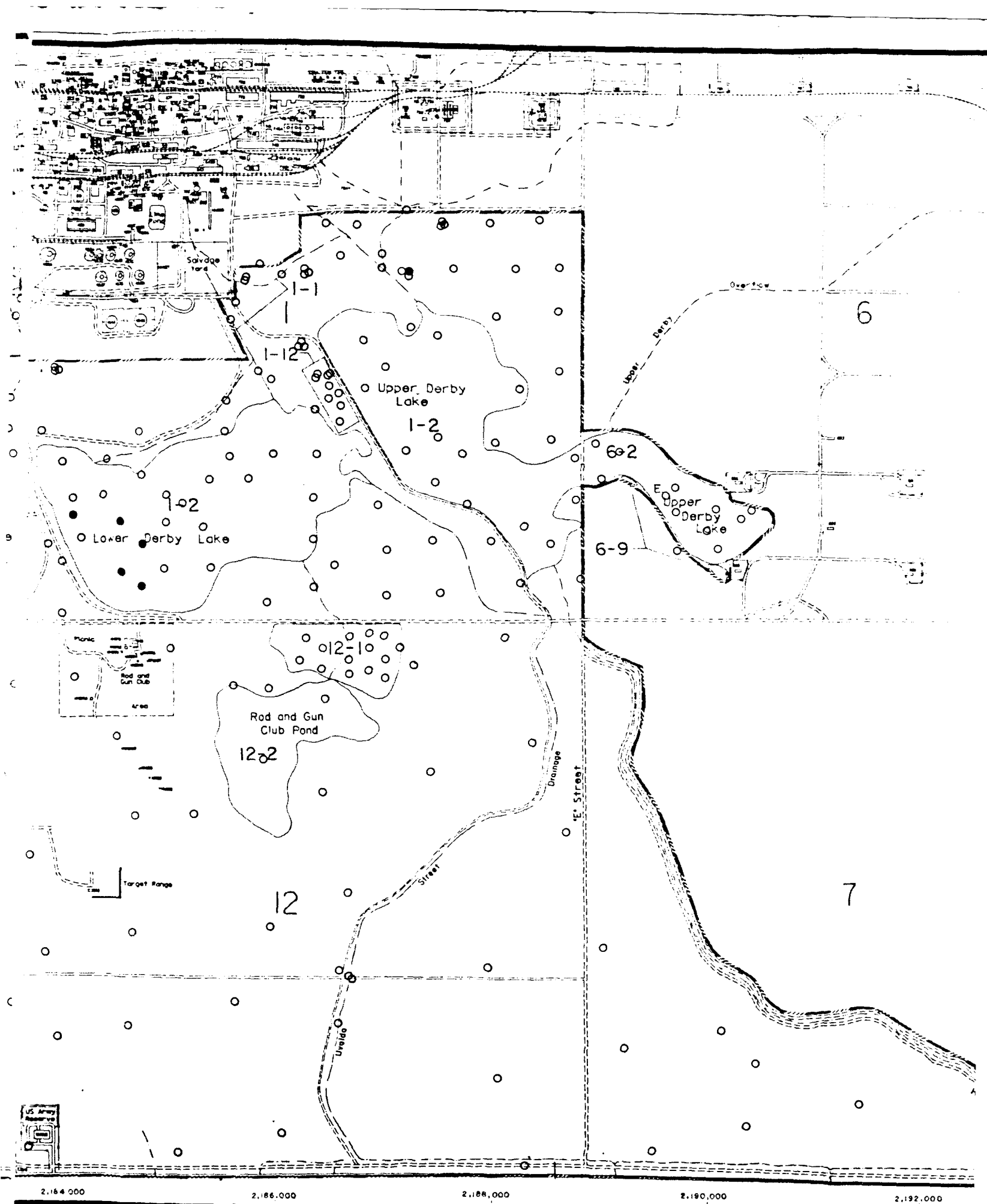
- ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)**
- Below Certified Reporting Limit (BCRL)
 - 0.0050 - 1.0
 - > 1.0 - 10
 - > 10 - 100
 - > 100



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Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-7
Dibromochloropropane in Soils
in the 0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





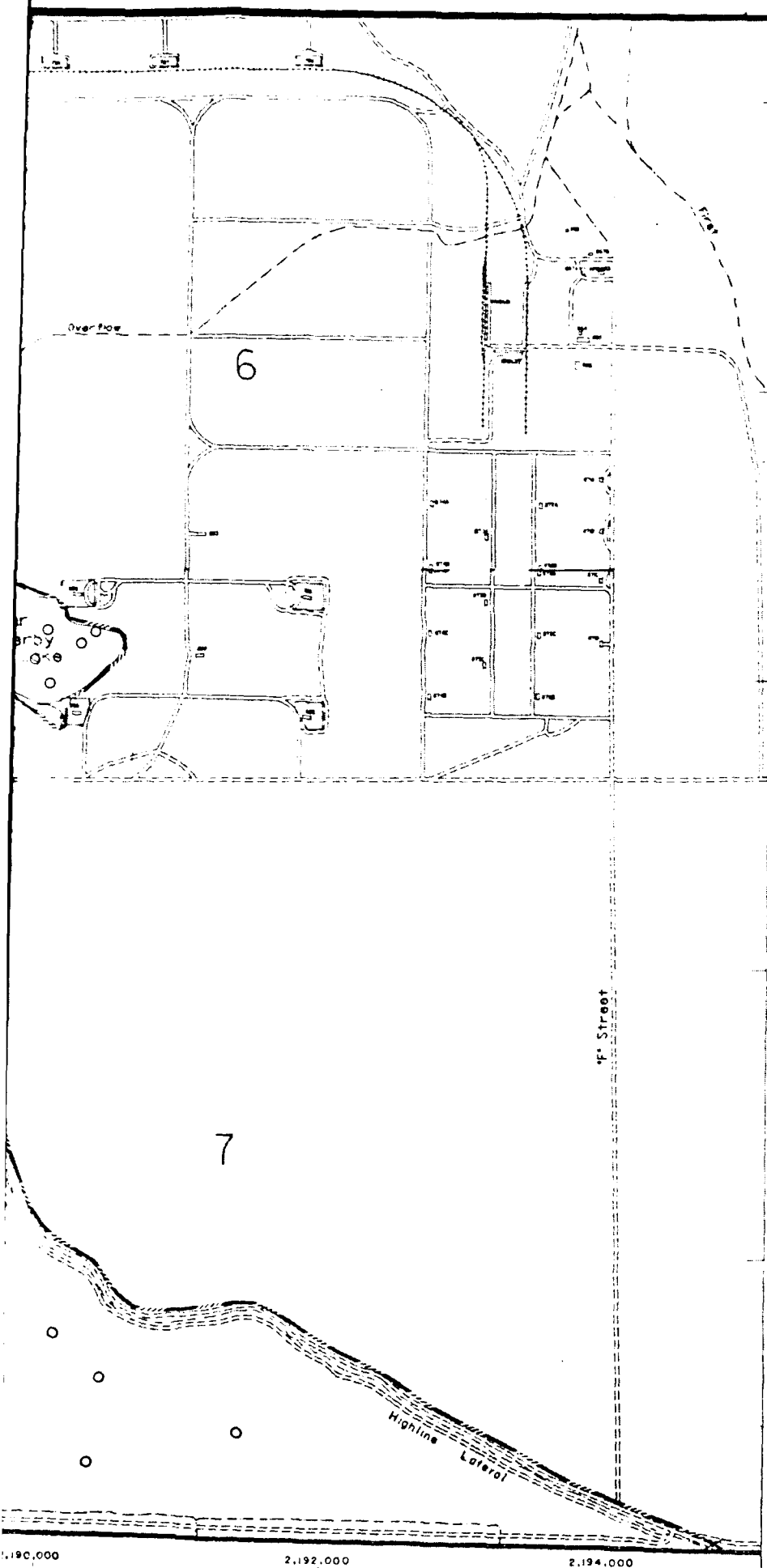
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



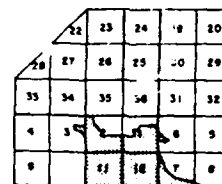
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.0050-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

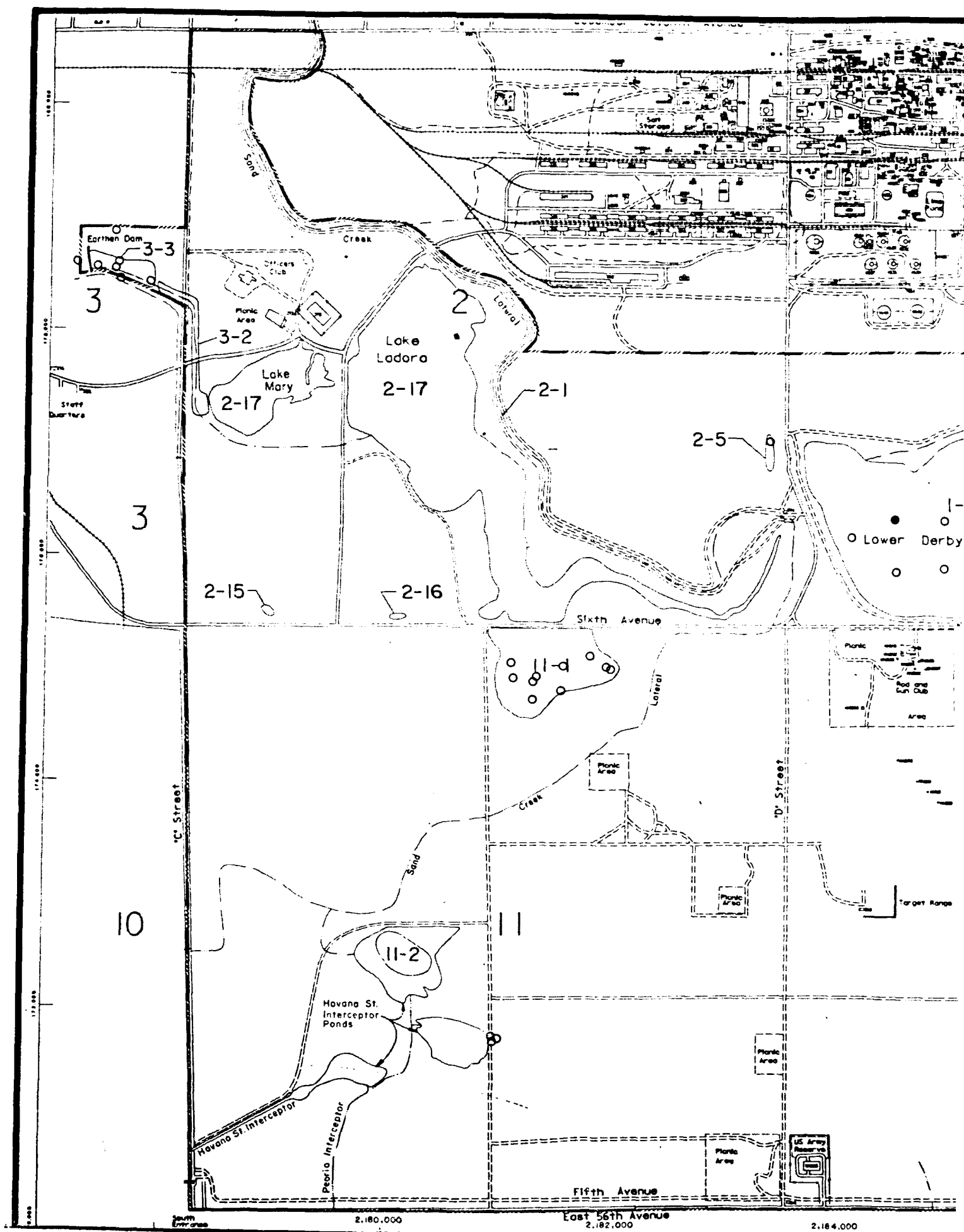


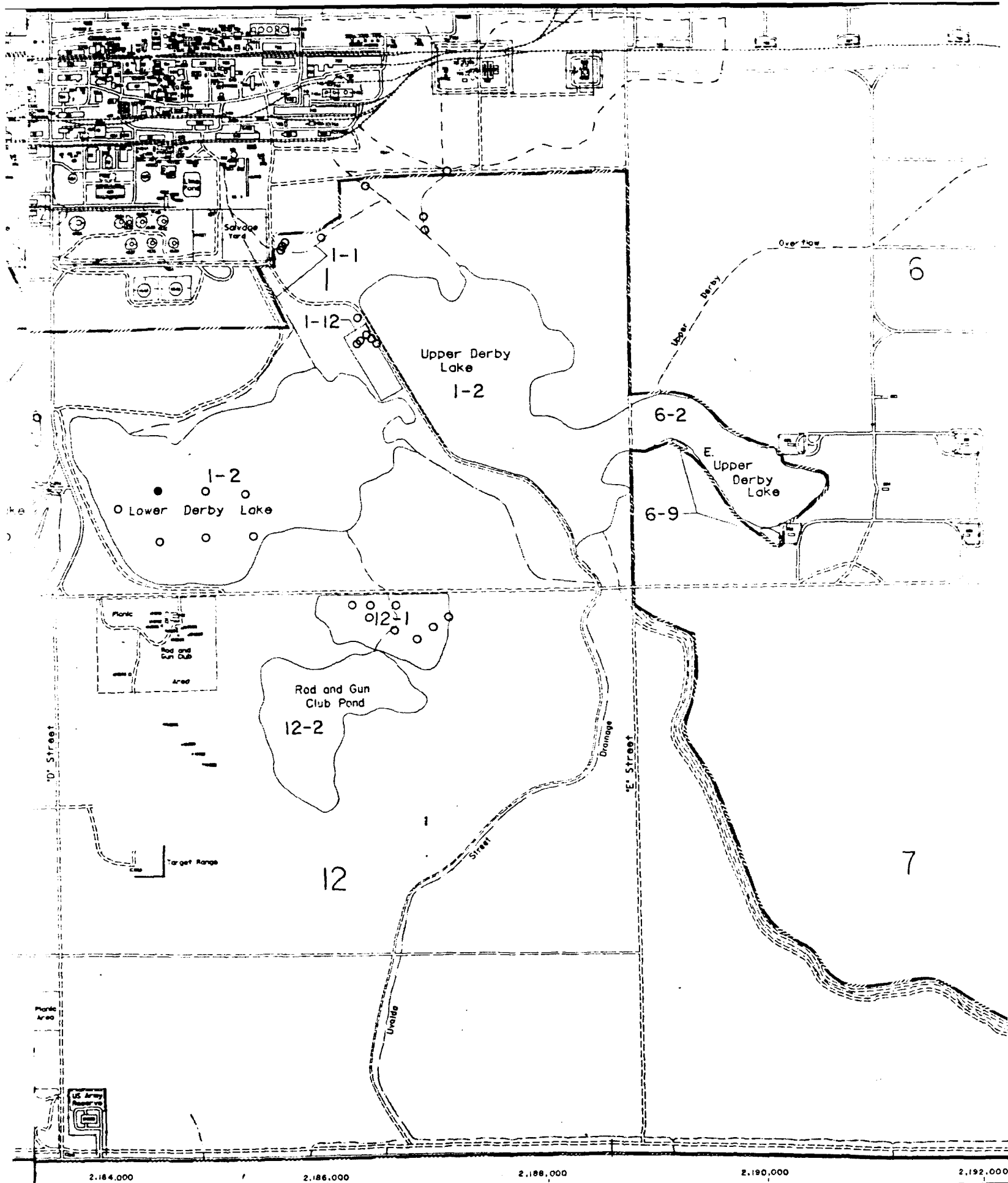
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-8
Dibromochloropropane in Soils
in the 2-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





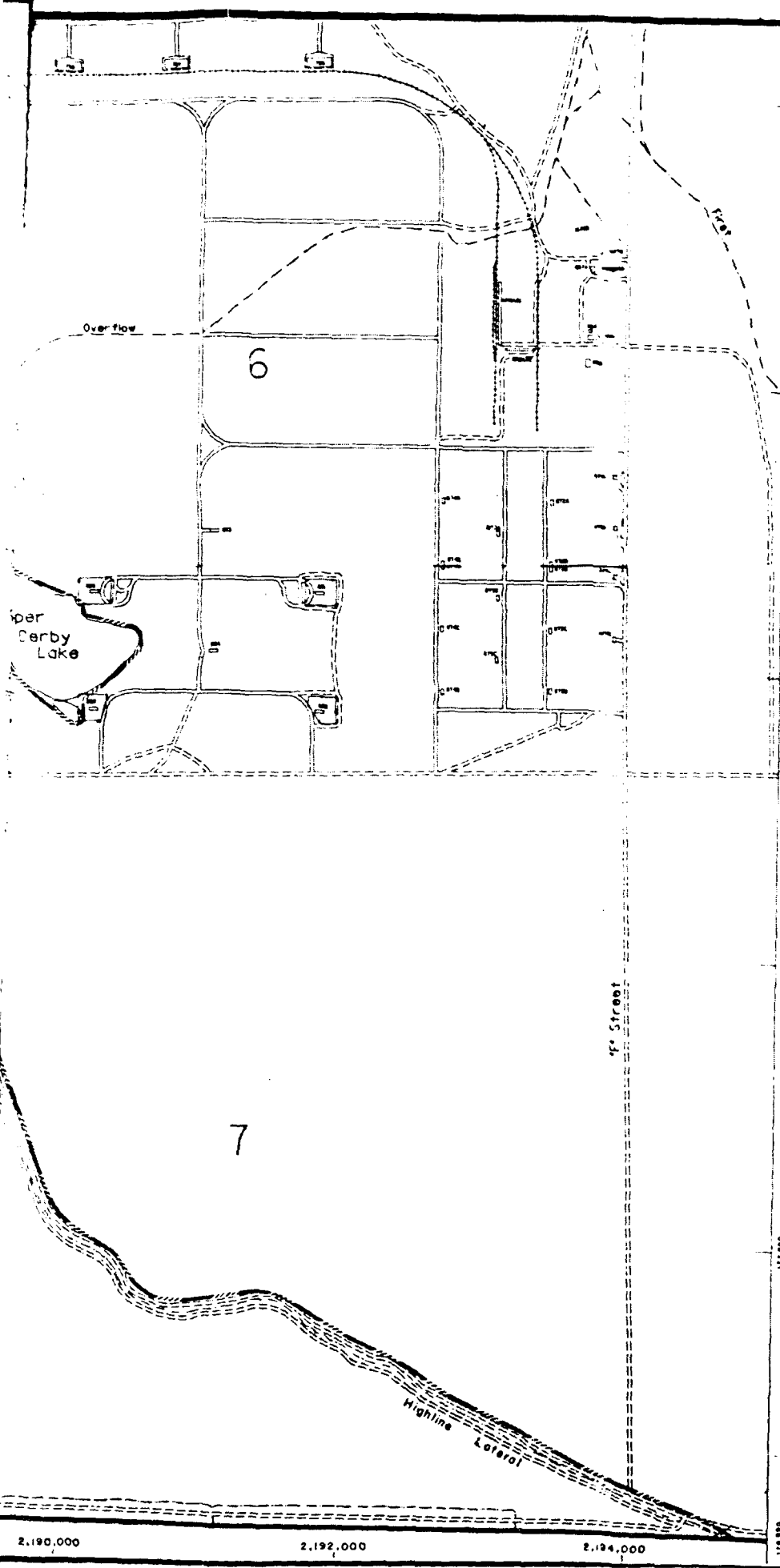
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



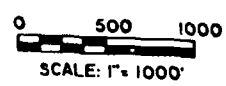
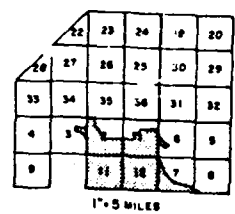
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

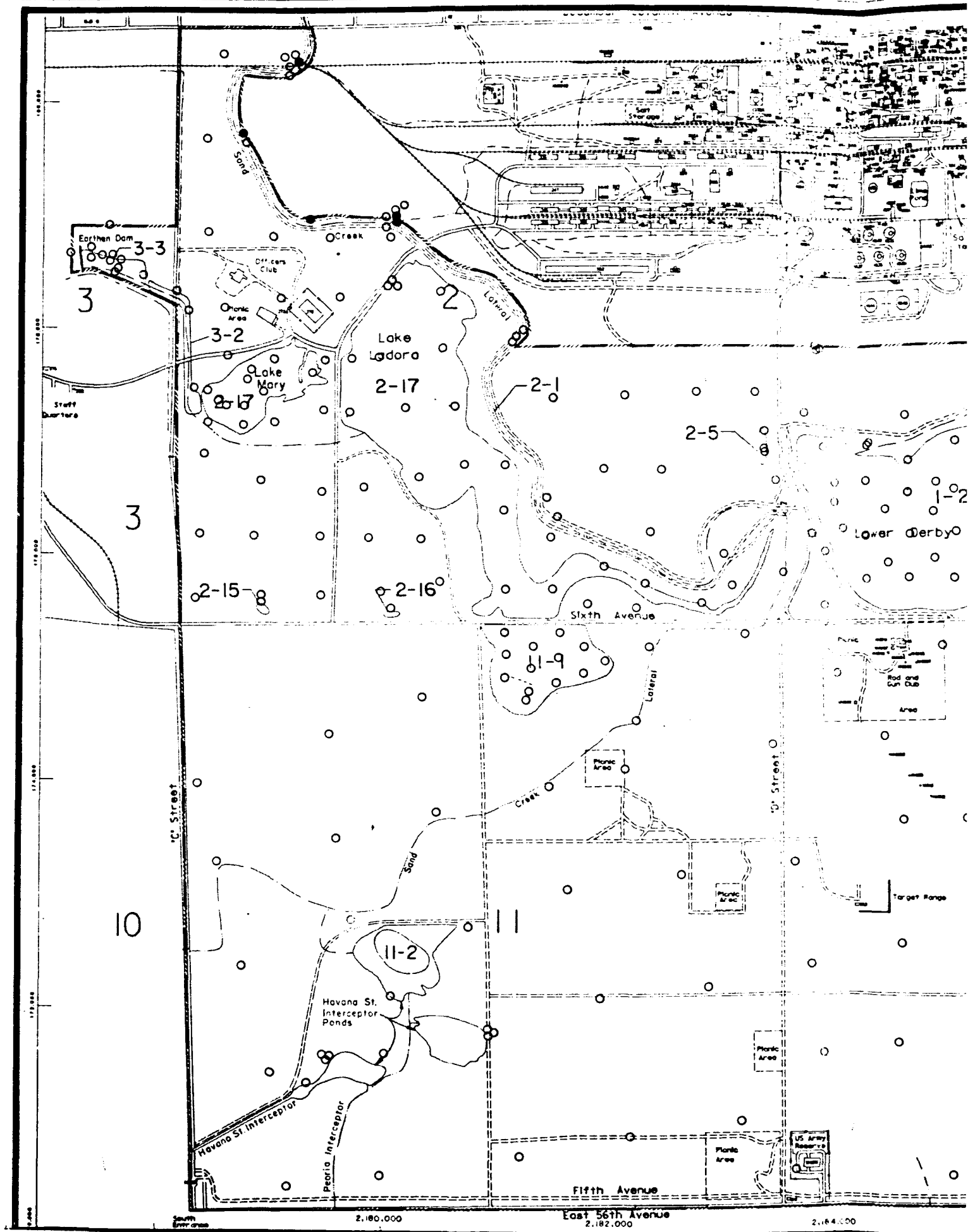
- Below Certified Reporting Limit (BCRL)
- 0.0050-1.0
- > 1.0-10
- > 10-100
- > 100

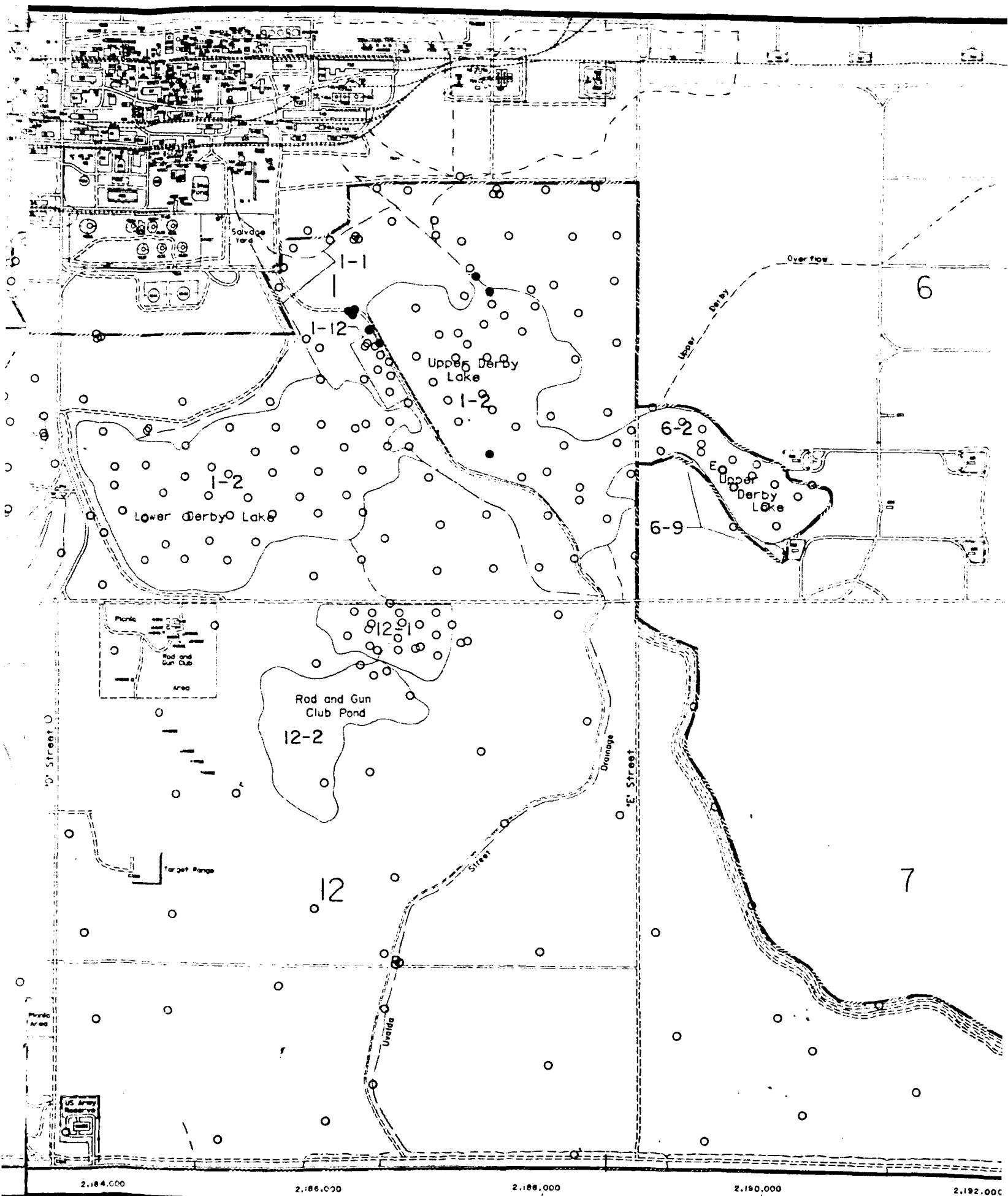
ROCKY MOUNTAIN ARSENAL LOCATION

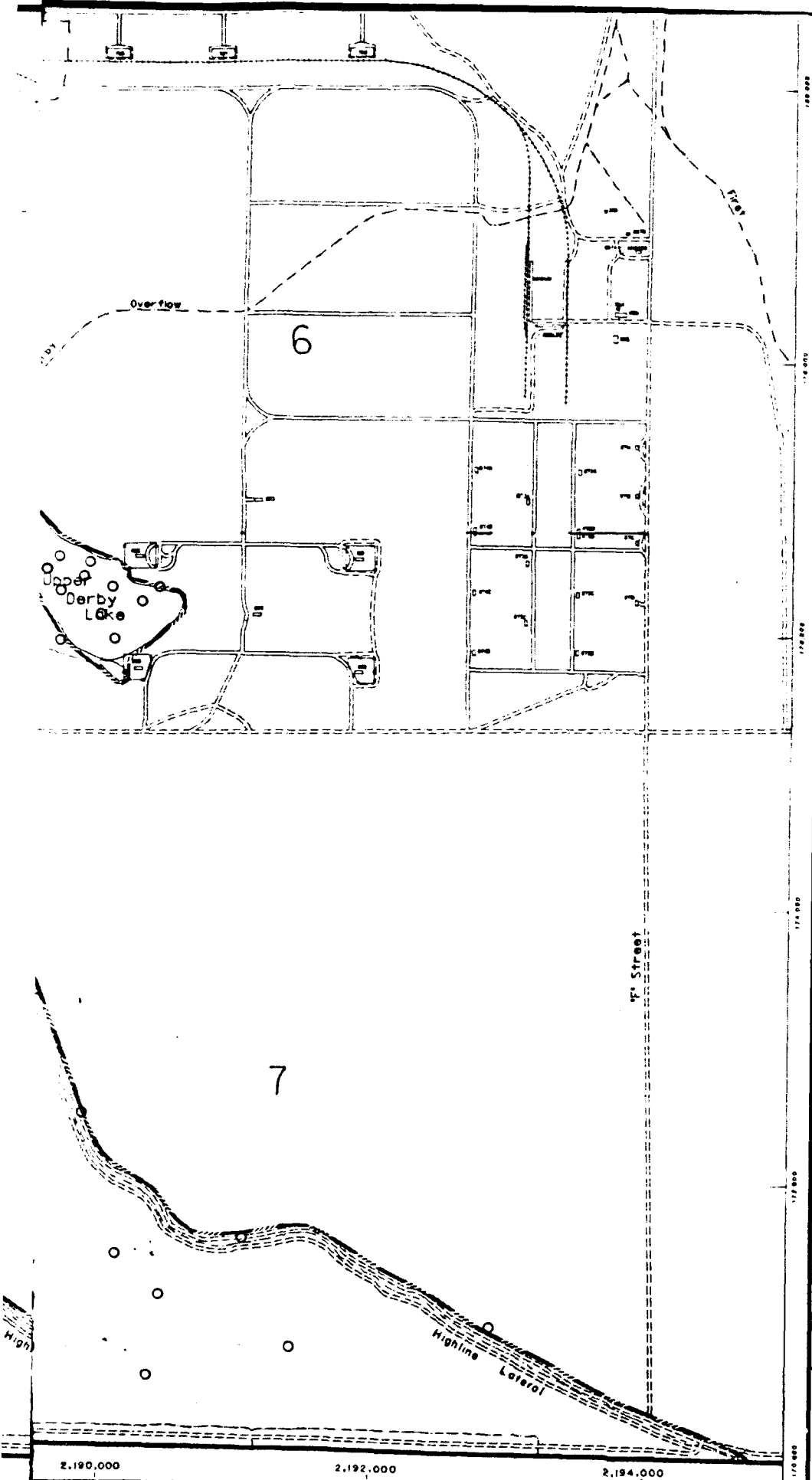


Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-9
Dibromochloropropane in Soils
in the 5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

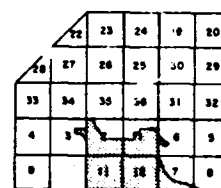
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.0018 - 1.0
- > 1.0 - 10
- > 10 - 100
- > 100

ROCKY MOUNTAIN ARSENAL LOCATION



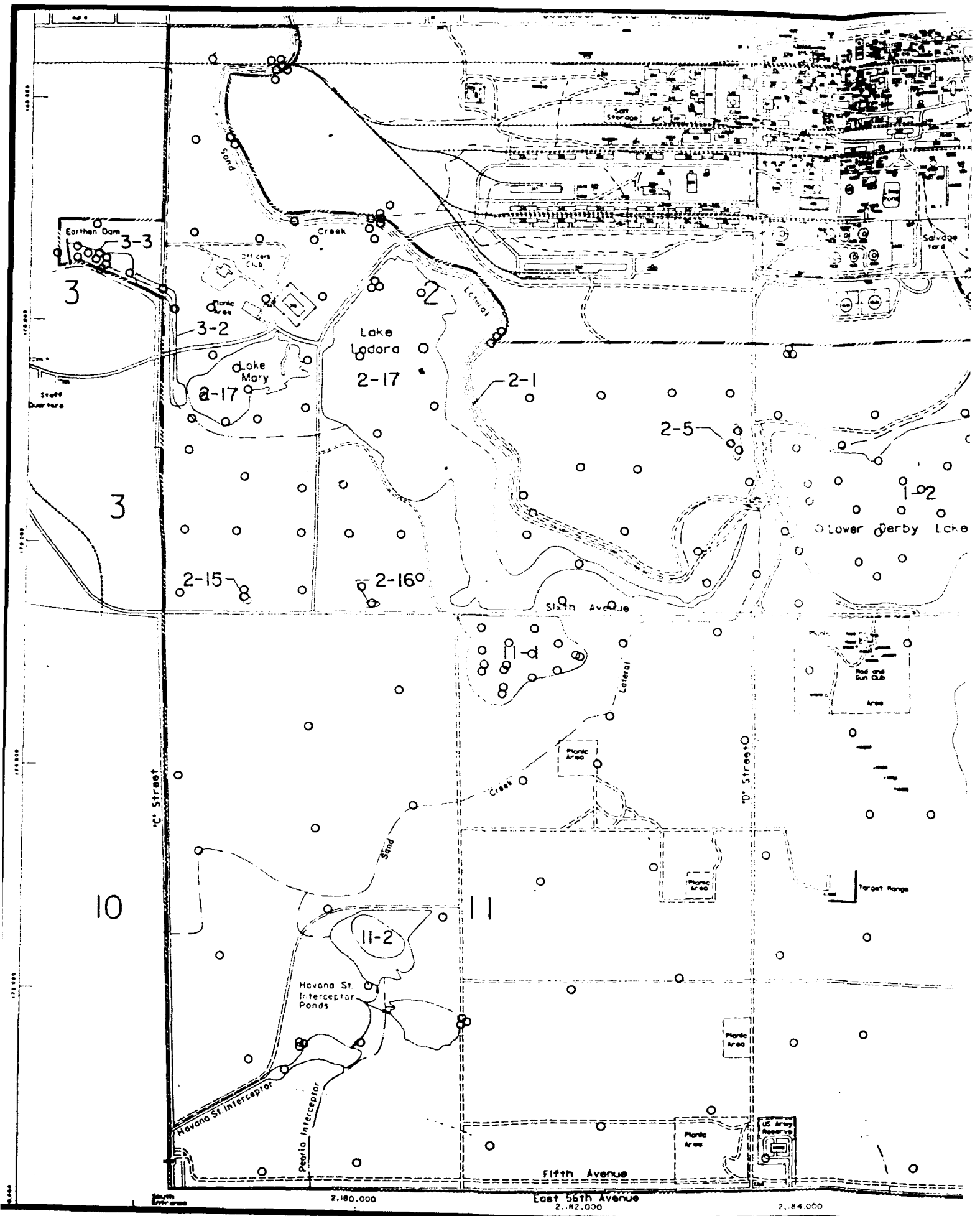
1" = 5 MILES

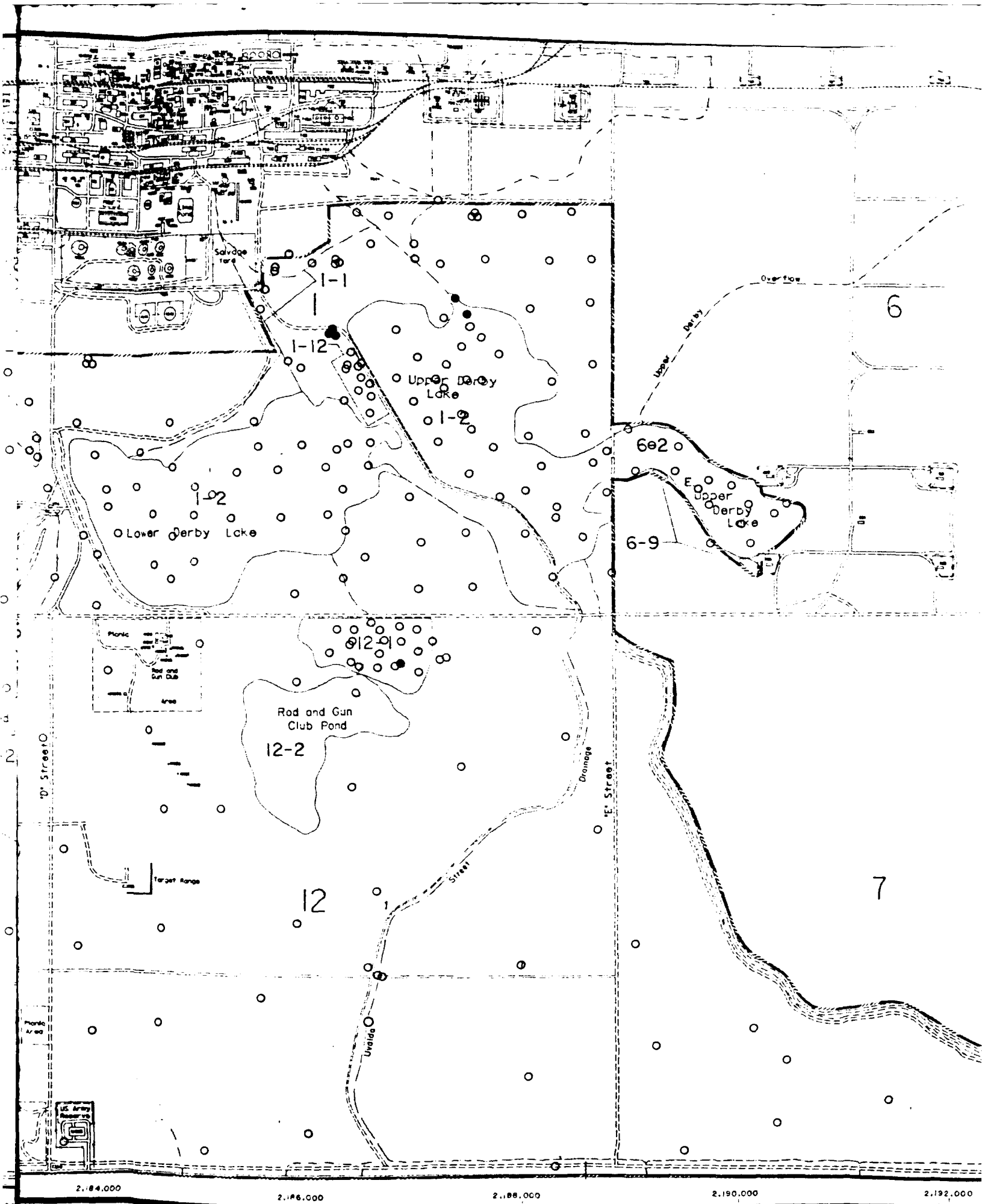
0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-10
Semivolatile Halogenated Organics in Soils
in the 0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





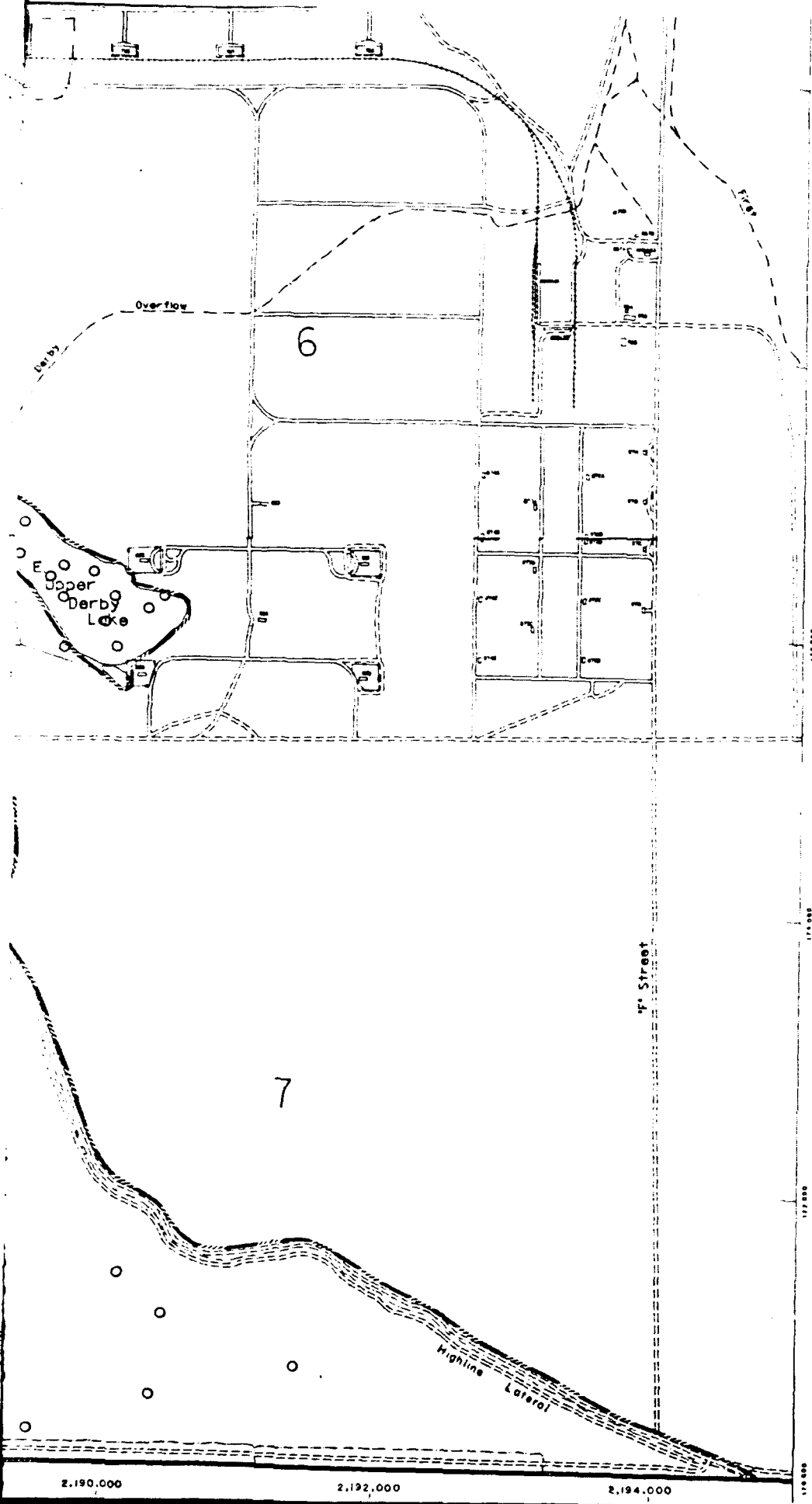
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

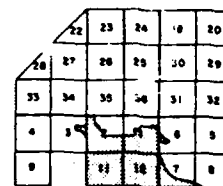
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.0018-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES



Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

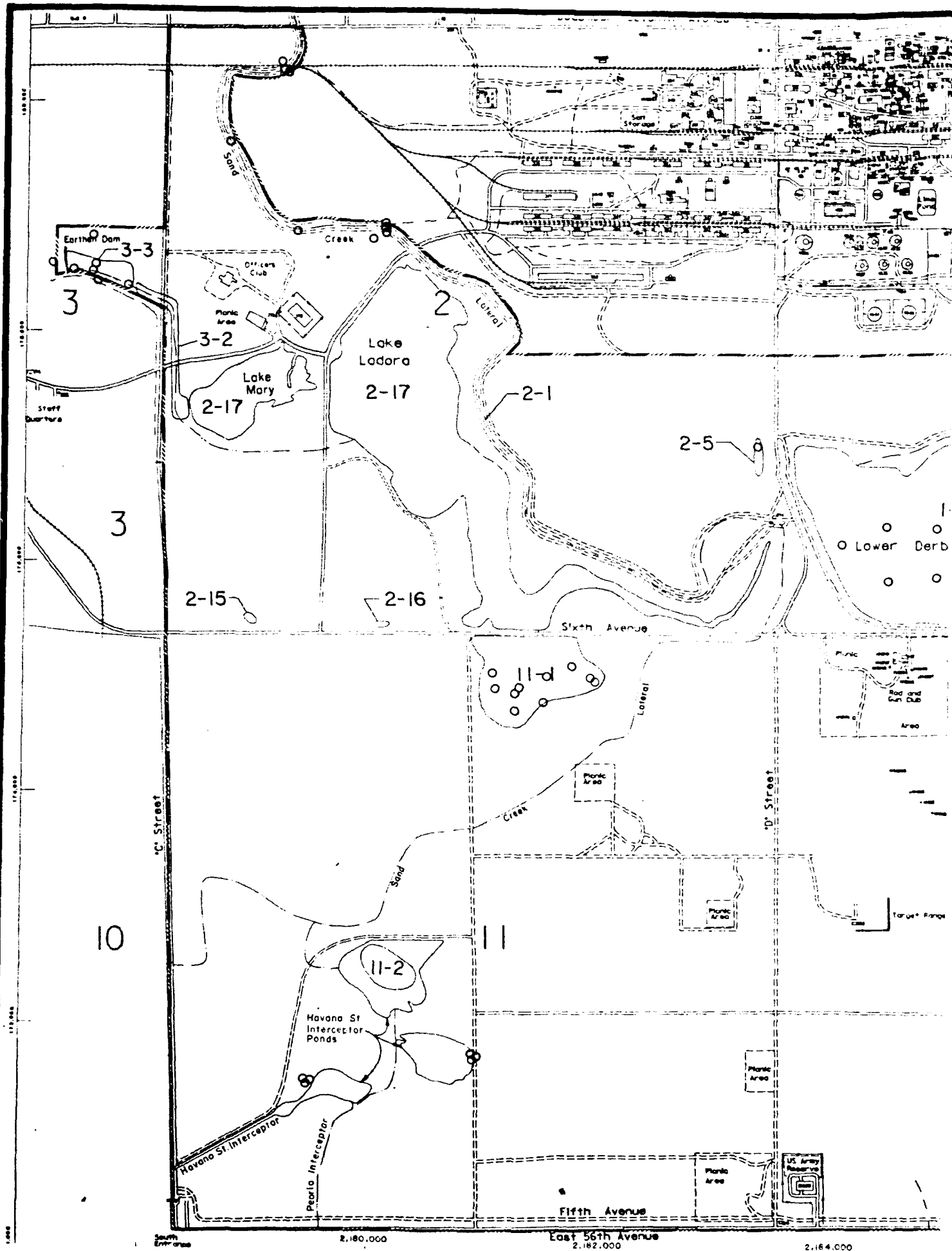
FIGURE: SSA 2.1-11

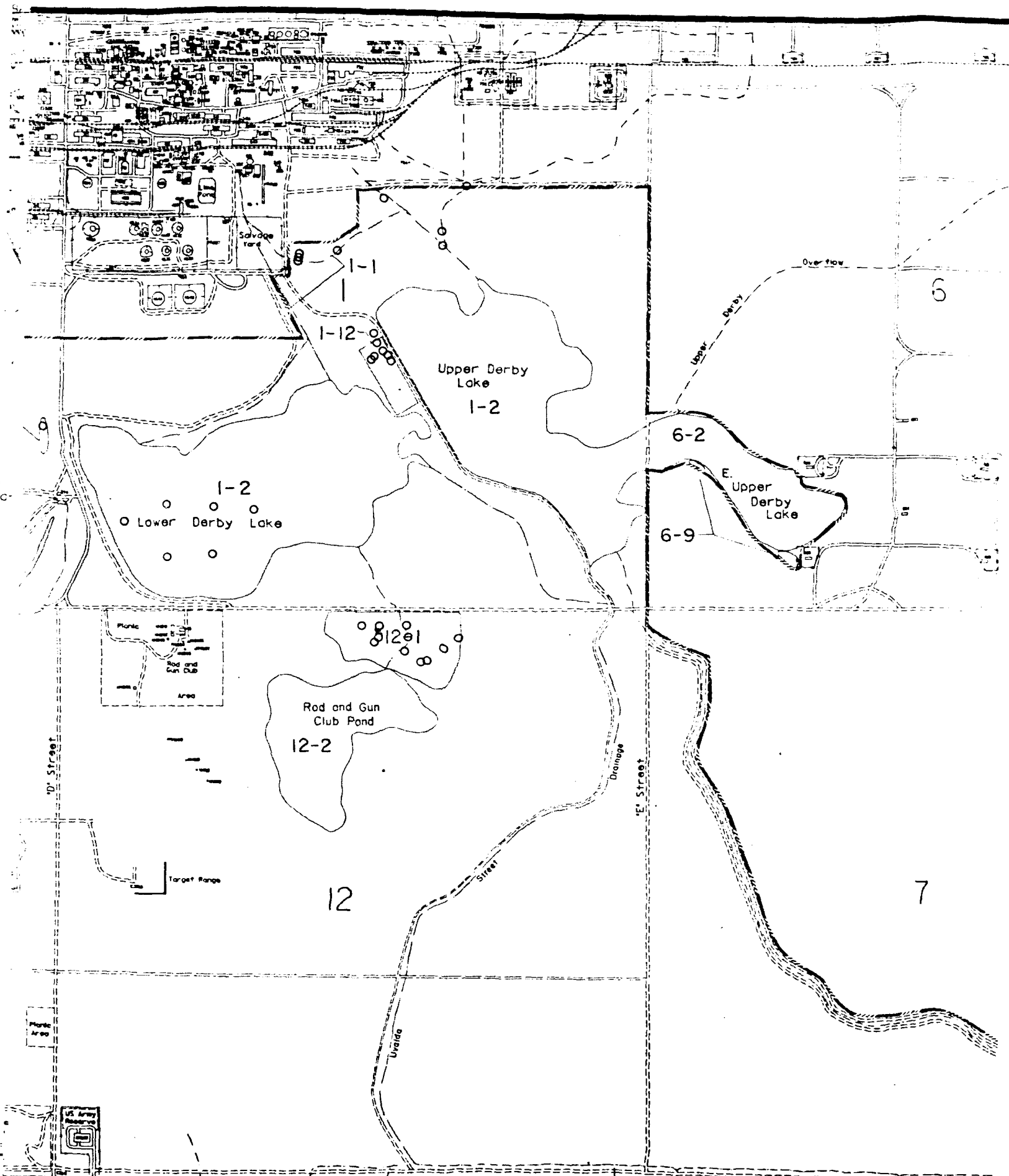
Semivolatile Halogenated Organics in
Soils in the 2-5 ft. Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated





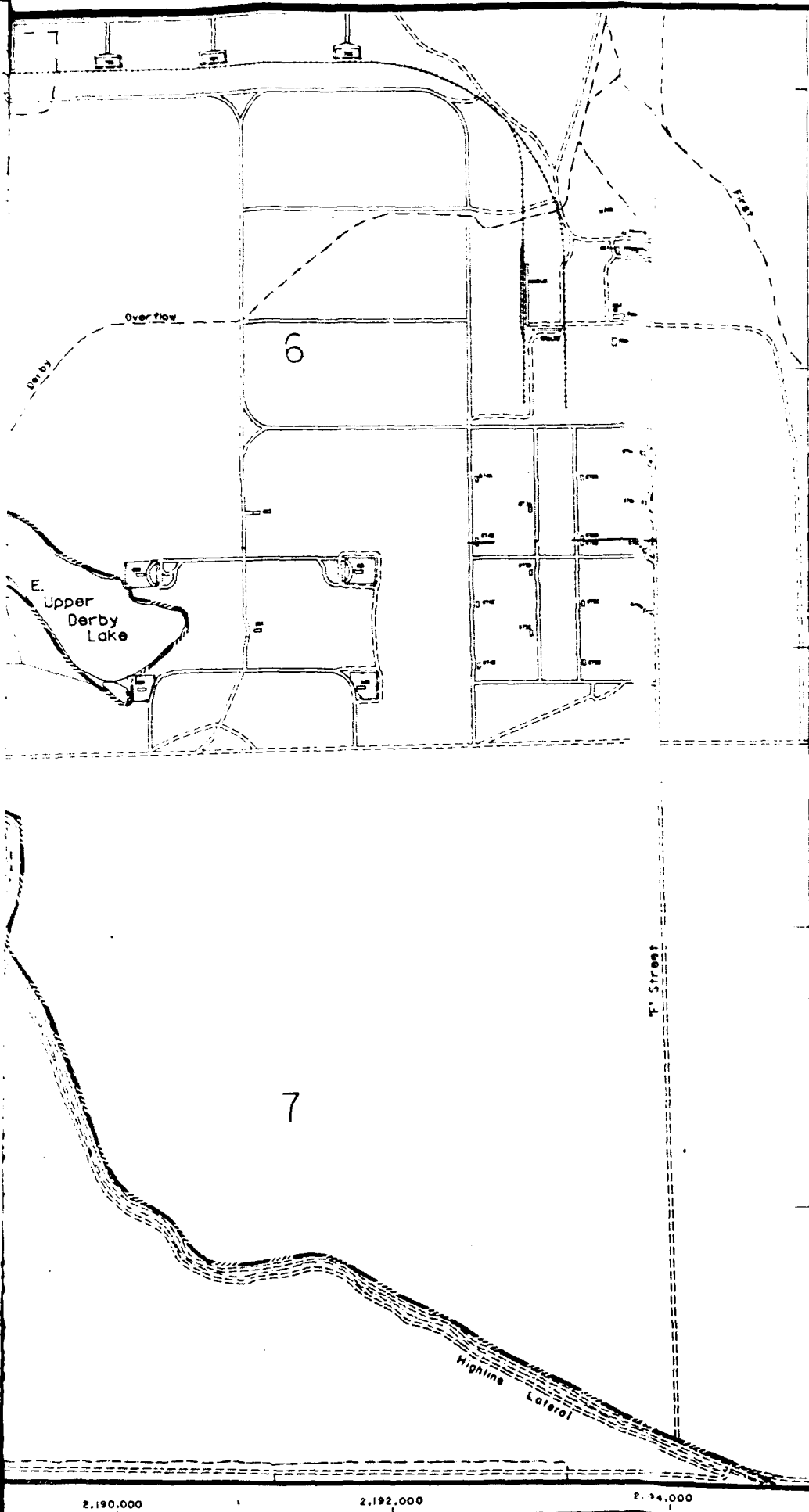
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



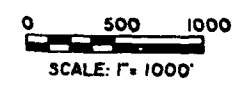
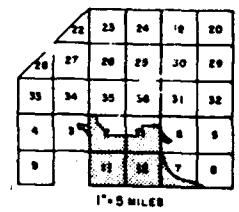
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

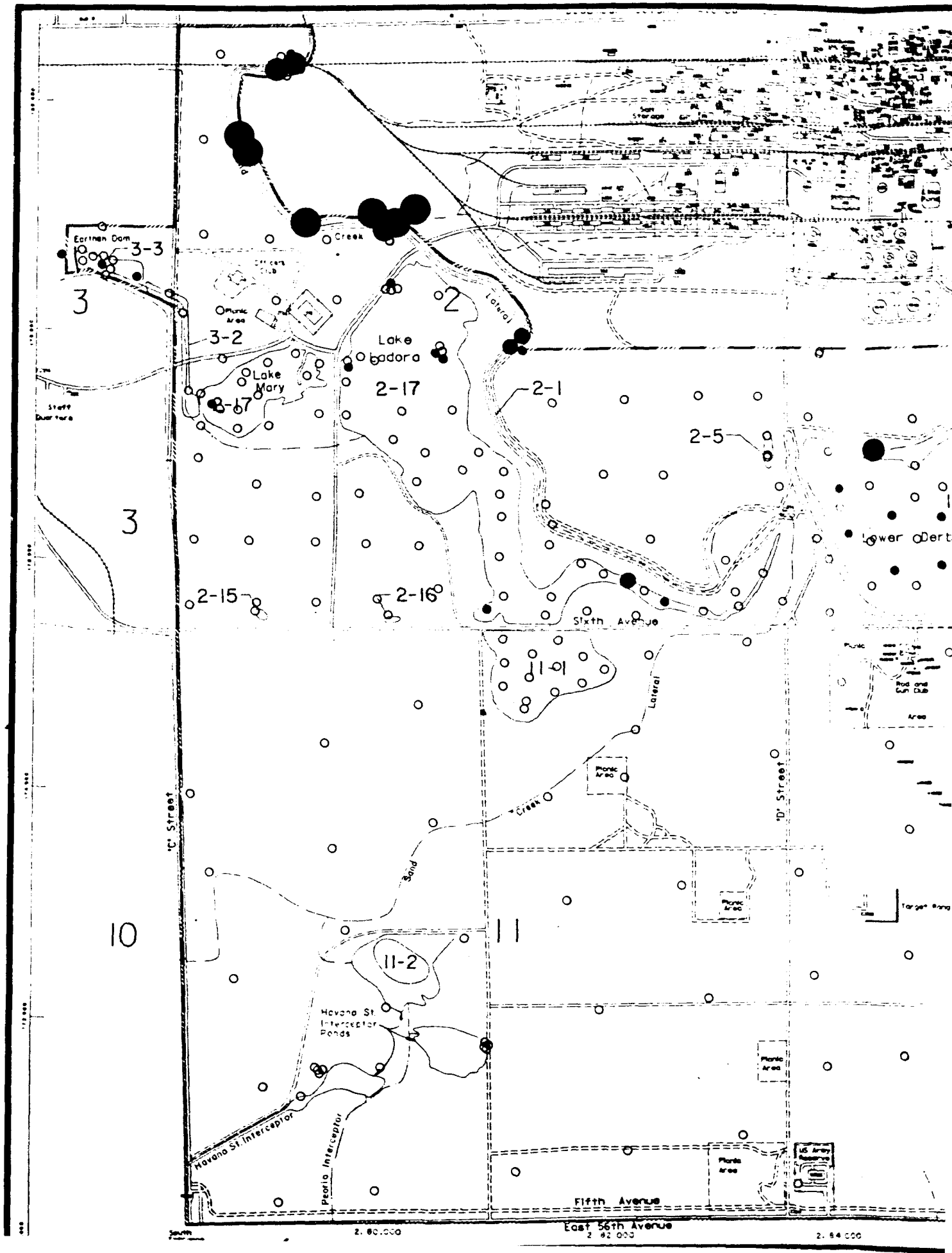
- Below Certified Reporting Limit (BCRL)
- 0.0018-1.0
- >1.0-10
- >10-100
- >100

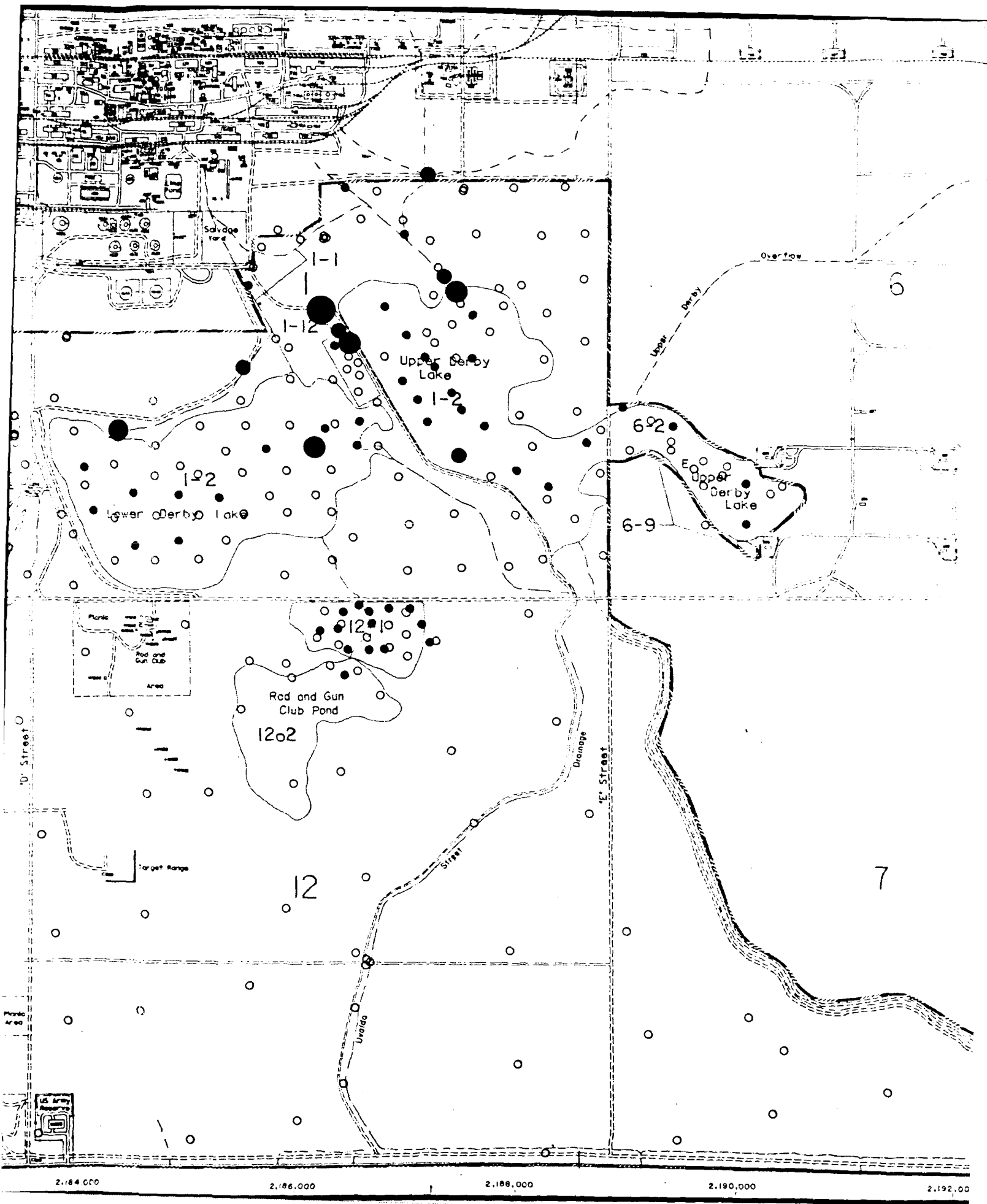
ROCKY MOUNTAIN ARSENAL LOCATION

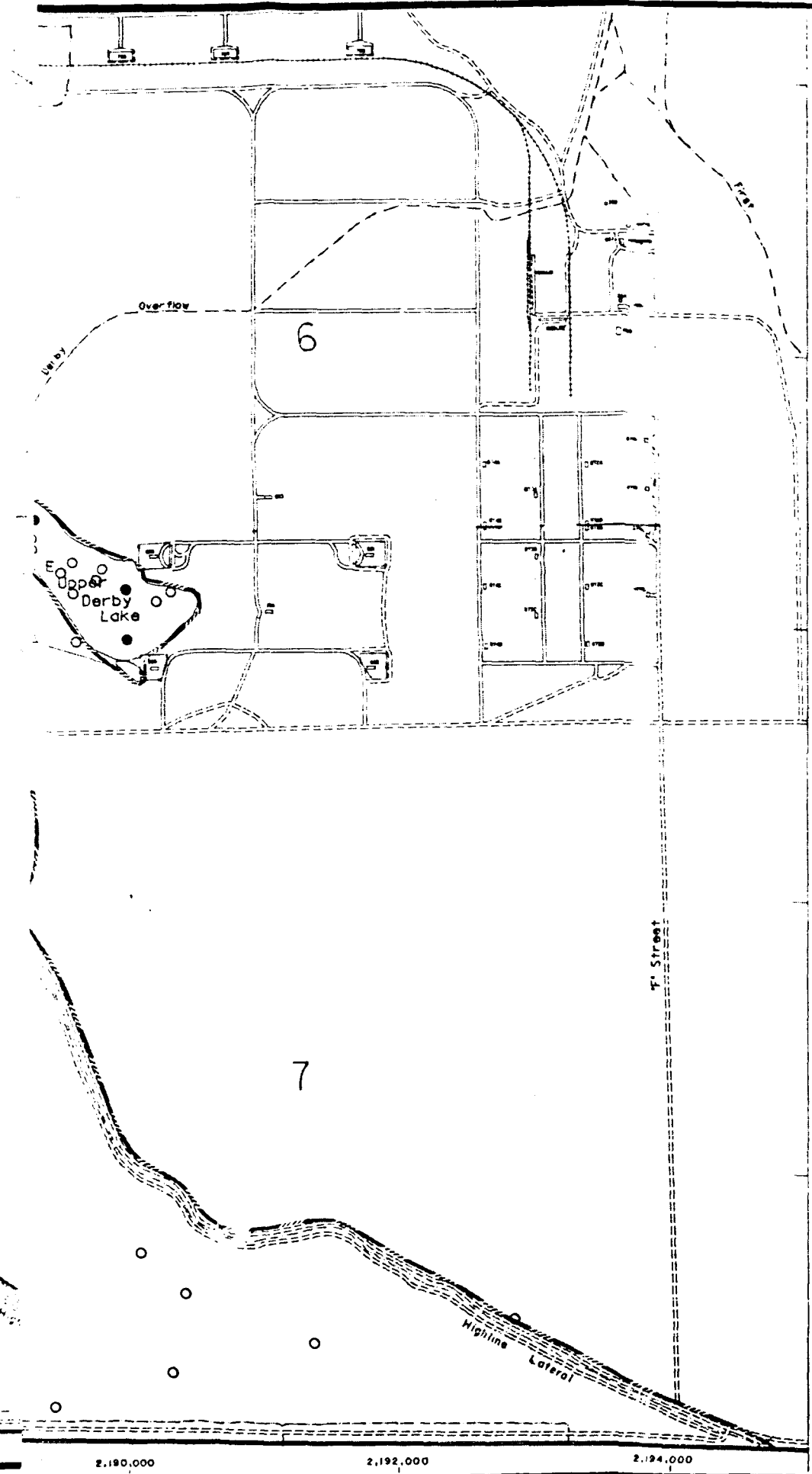


Prepared for:
 Program Manager's Office for
 Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-12
 Semivolatile Halogenated Organics in
 Soils in the 5-20 ft. Depth Interval
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated







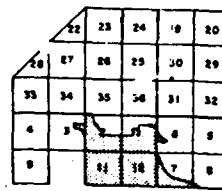
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

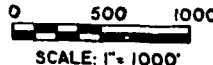
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.001-10
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



1"=5 MILES

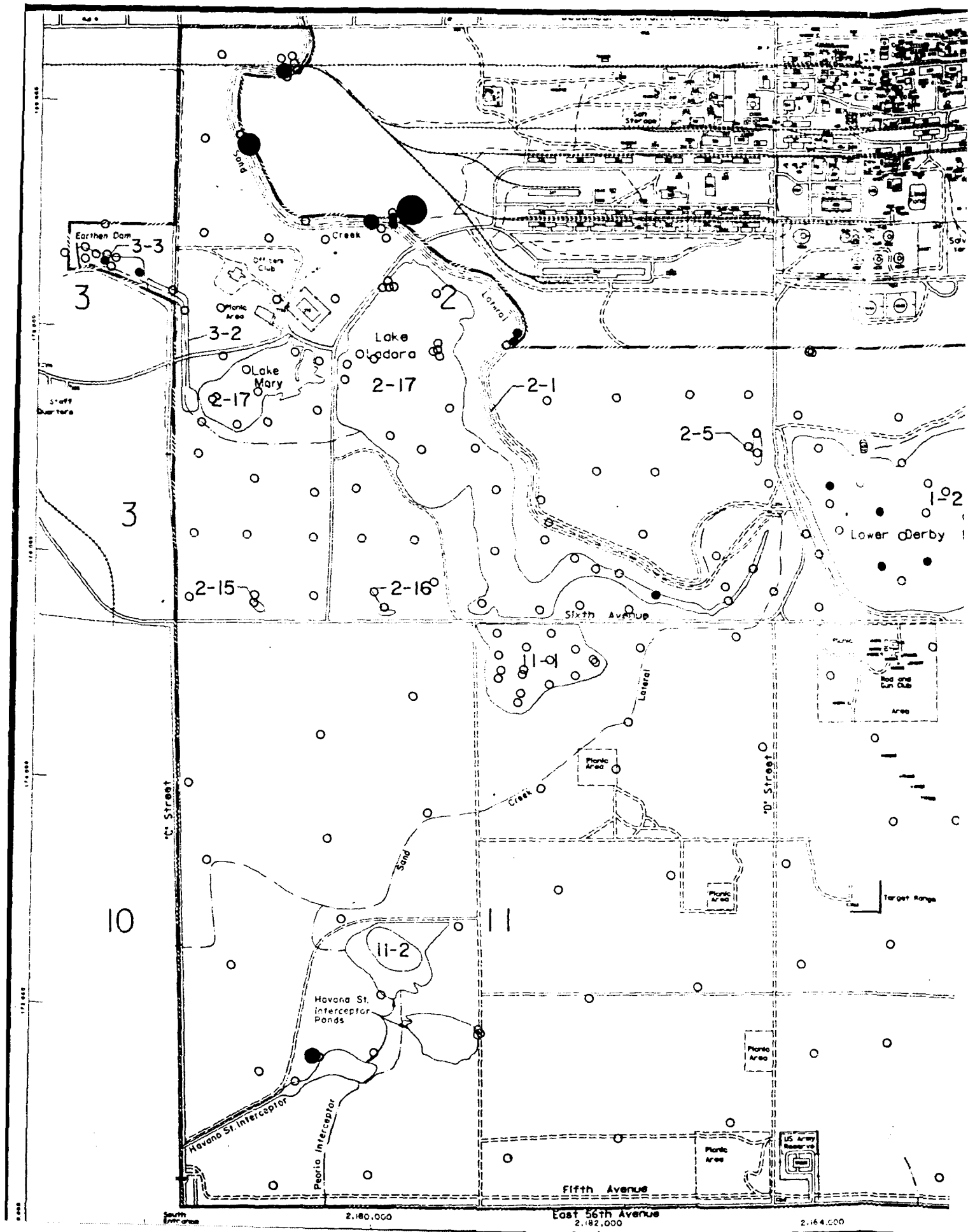


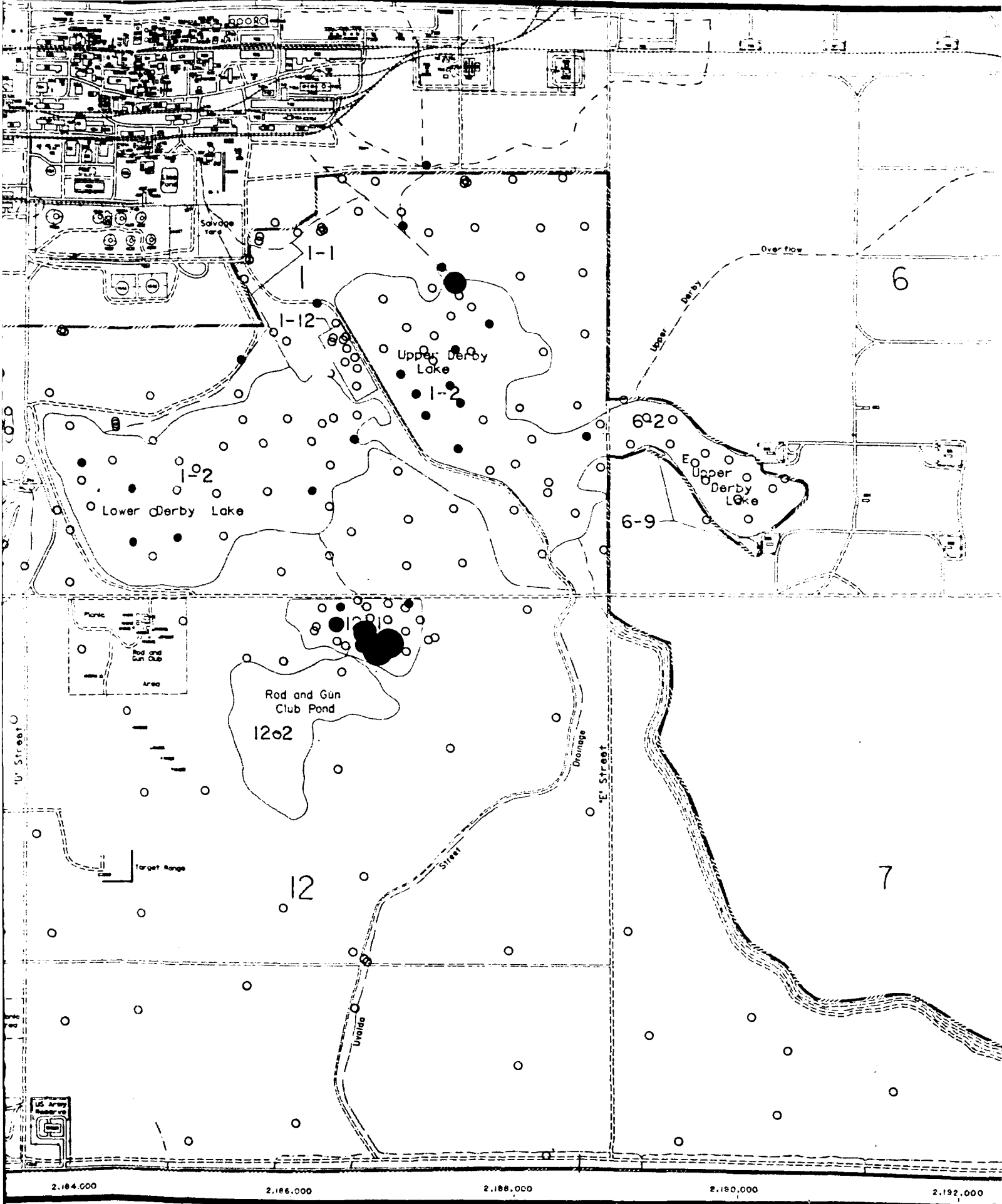
SCALE: 1"= 1000'

Prepared for:

**Program Manager's Office for
Rocky Mountain Arsenal Cleanup**

FIGURE: SSA 2.1-13
Organochlorine Pesticides in Soils in the 0-2 ft. Depth Interval. SUBGROUP 1 (Aldrin, Dieldrin, Endrin, Isodrin)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





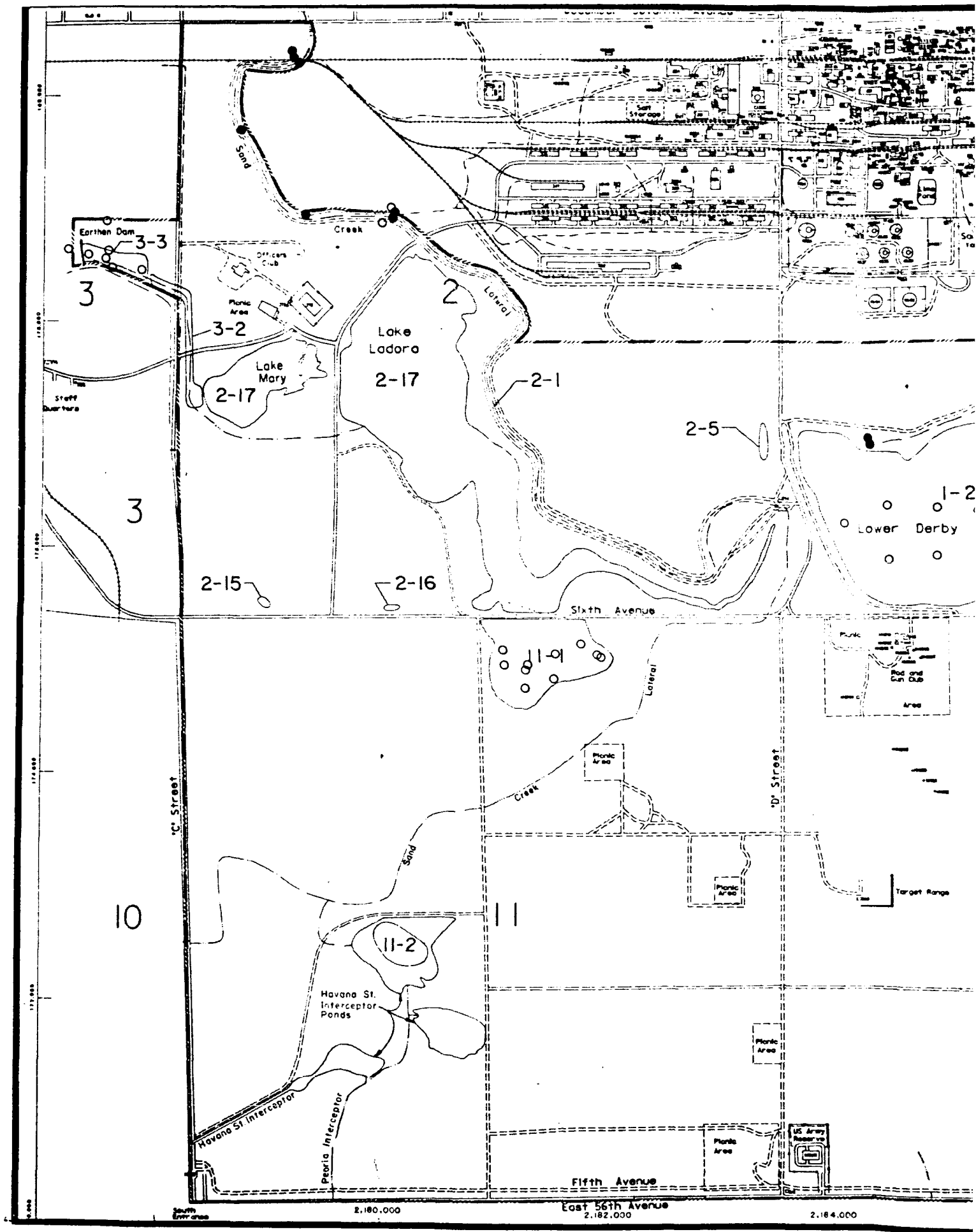
2,184,000

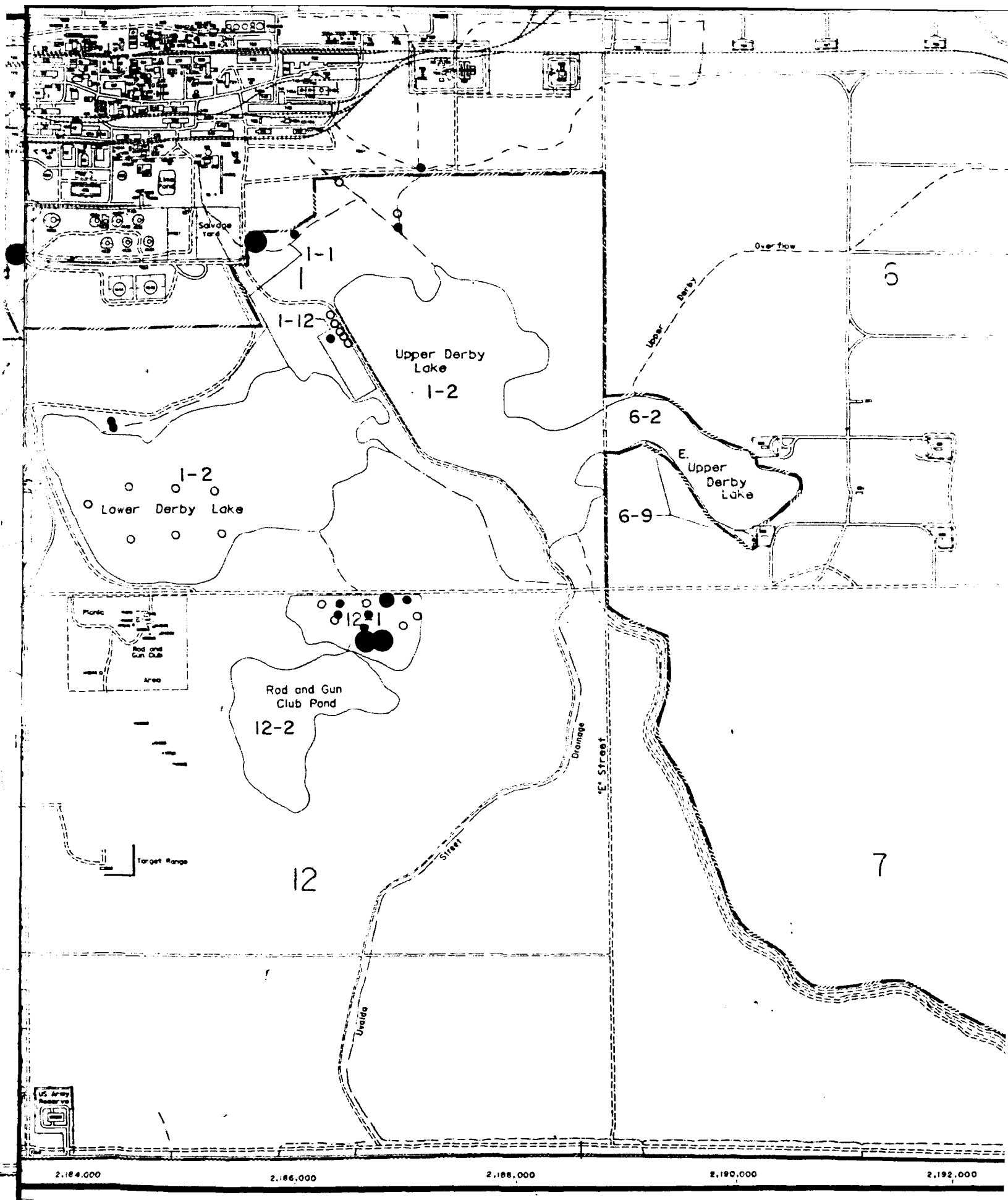
2,186,000

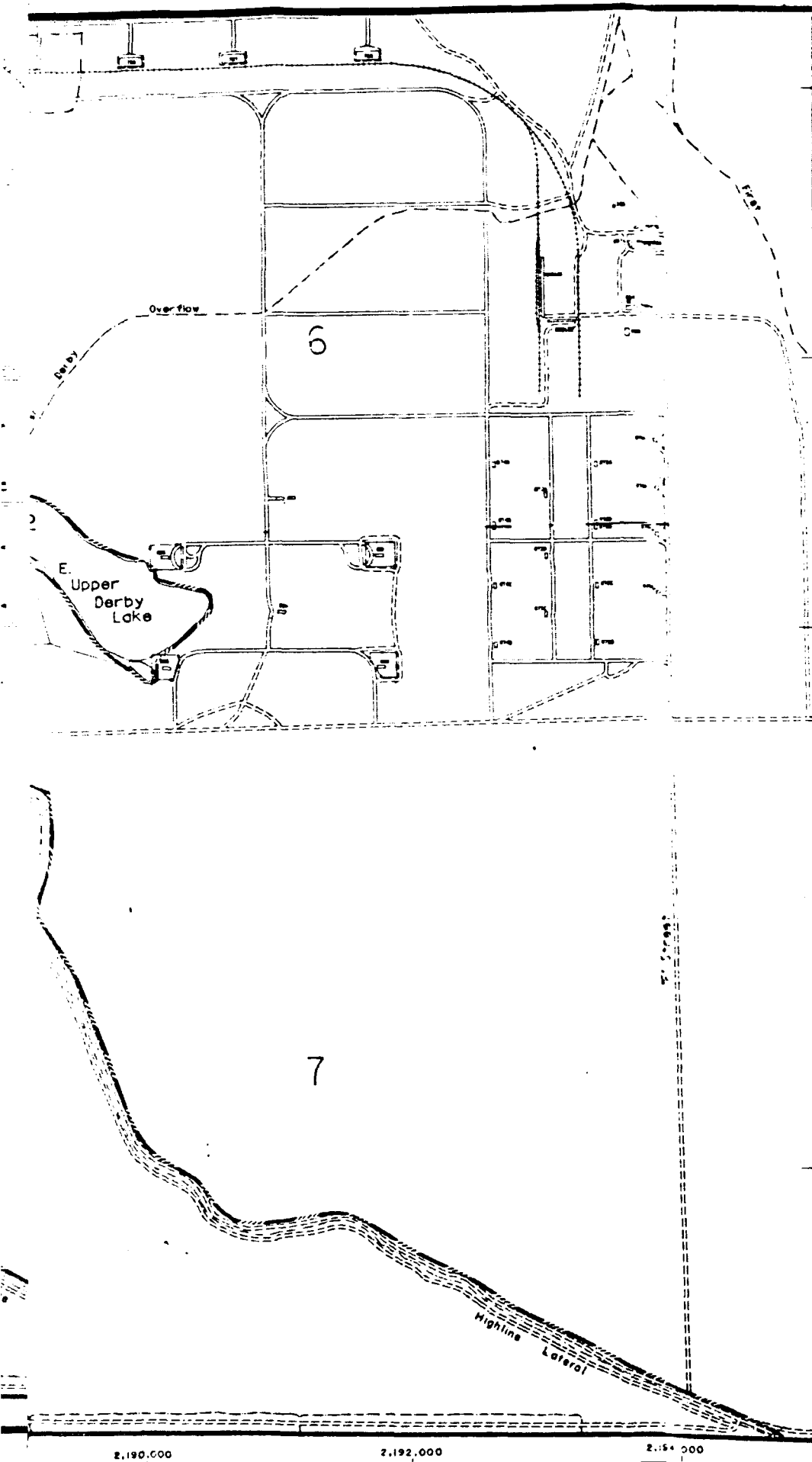
2,188,000

2,190,000

2,192,000







LEGEND

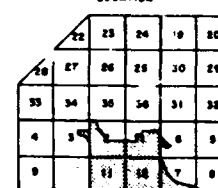
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.001-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION



0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

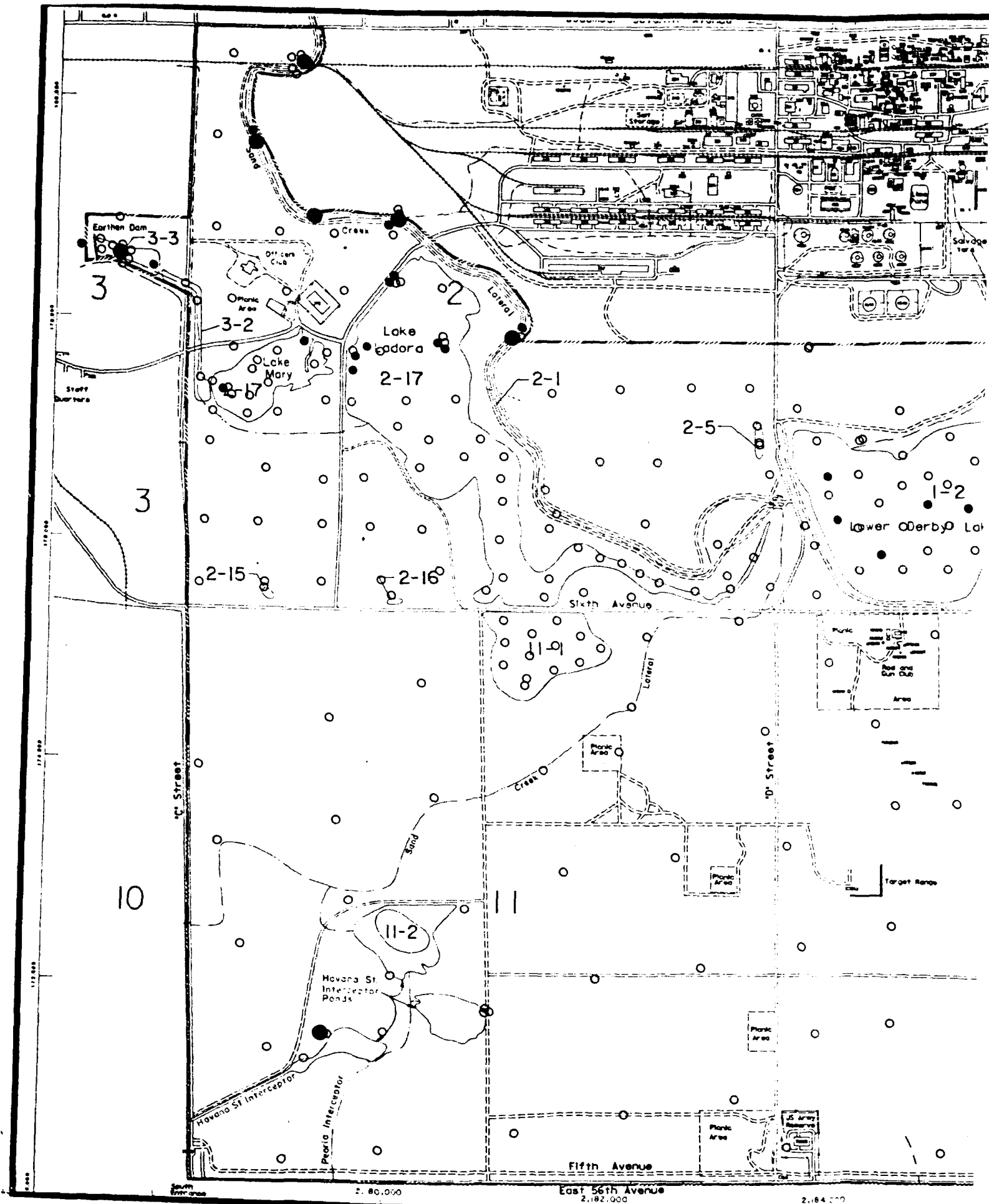
FIGURE: SSA 2.1-15

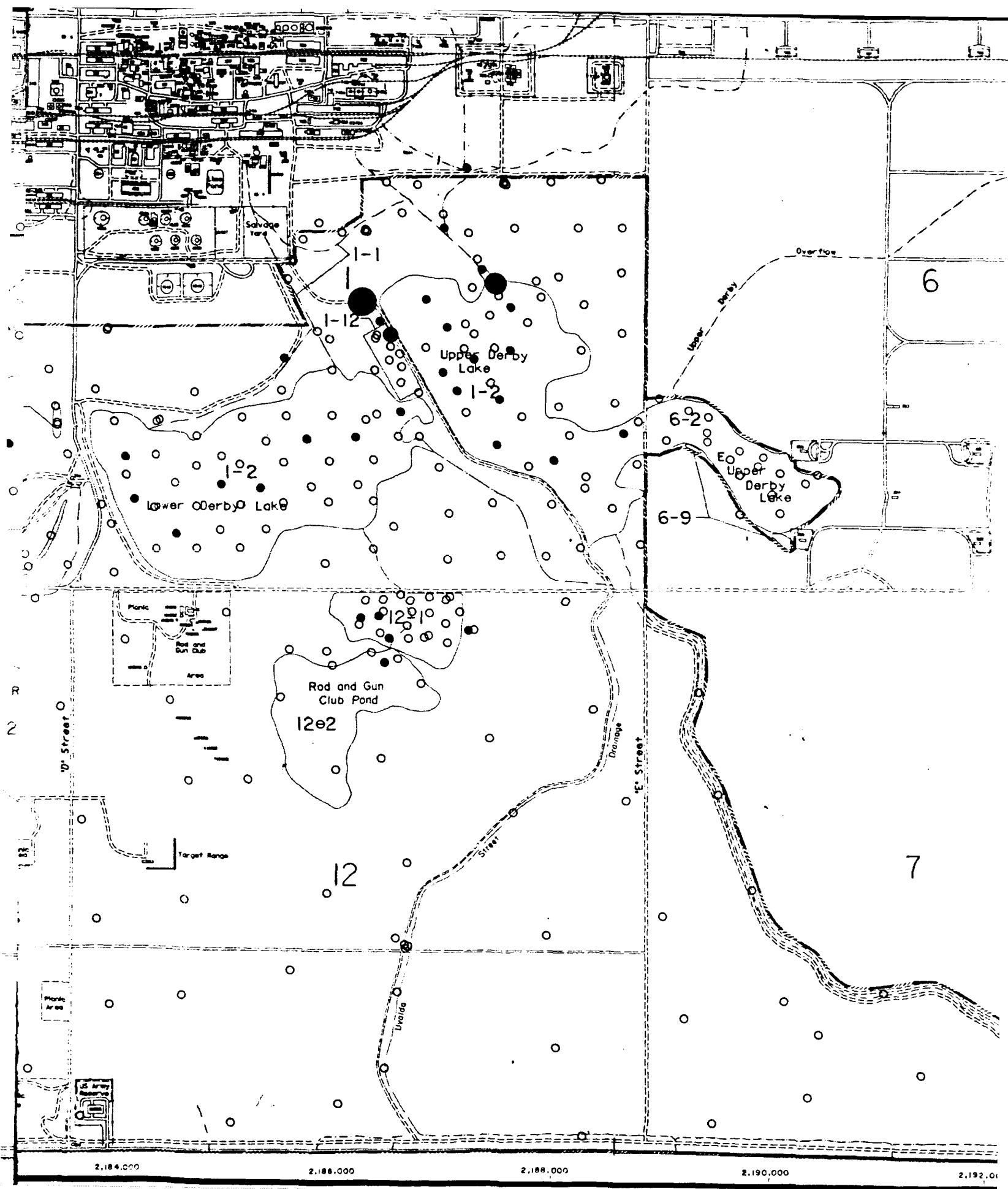
Organochlorine Pesticides in Soils in the 5-20 ft Depth Interval. SUBGROUP 1 (Aldrin, Dieldrin, Endrin, Isodrin)

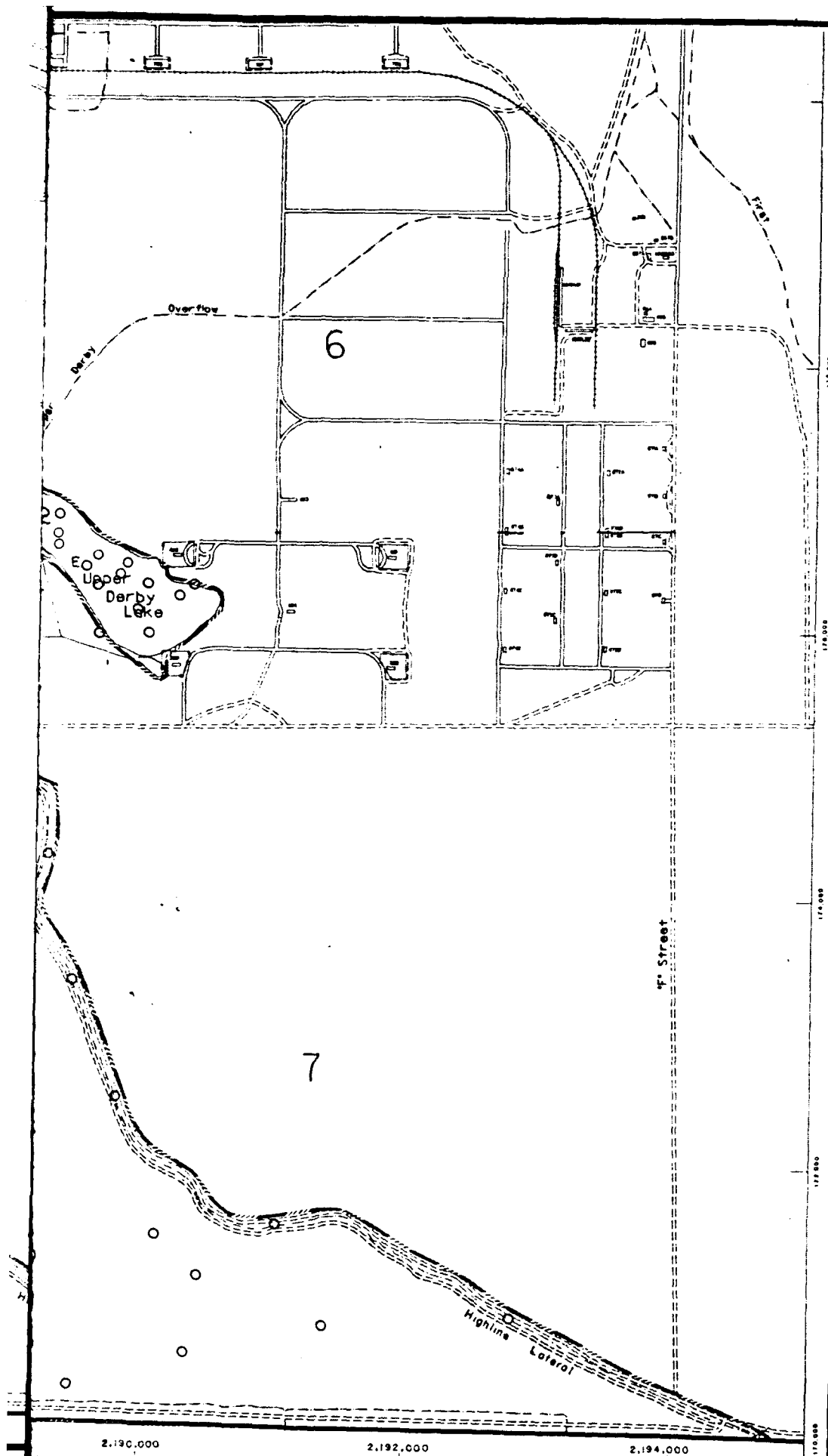
Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated







LEGEND

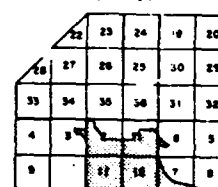
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.001-1.0
- >1.0-10
- >10-100
- >100

ROCKY MOUNTAIN ARSENAL LOCATION

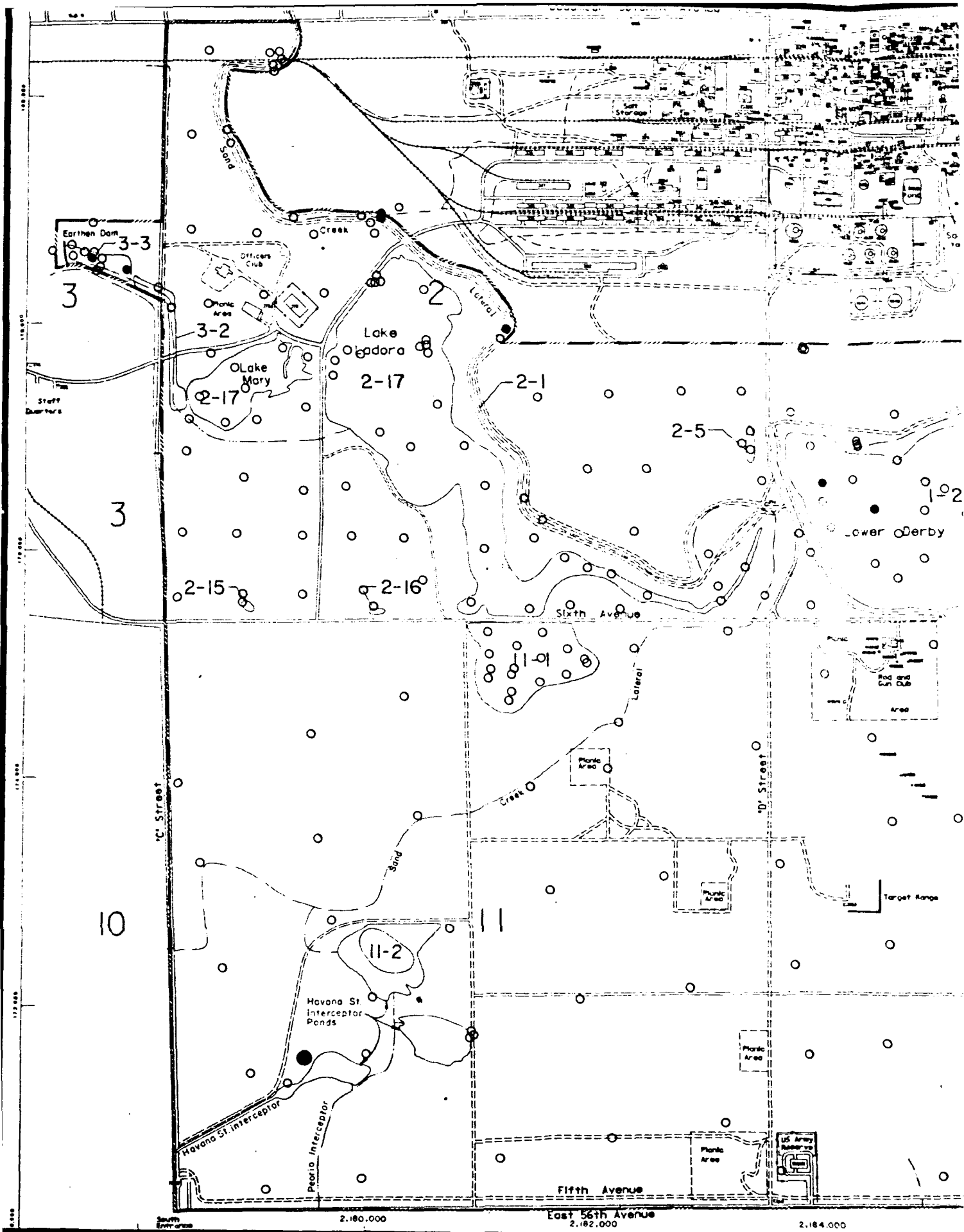


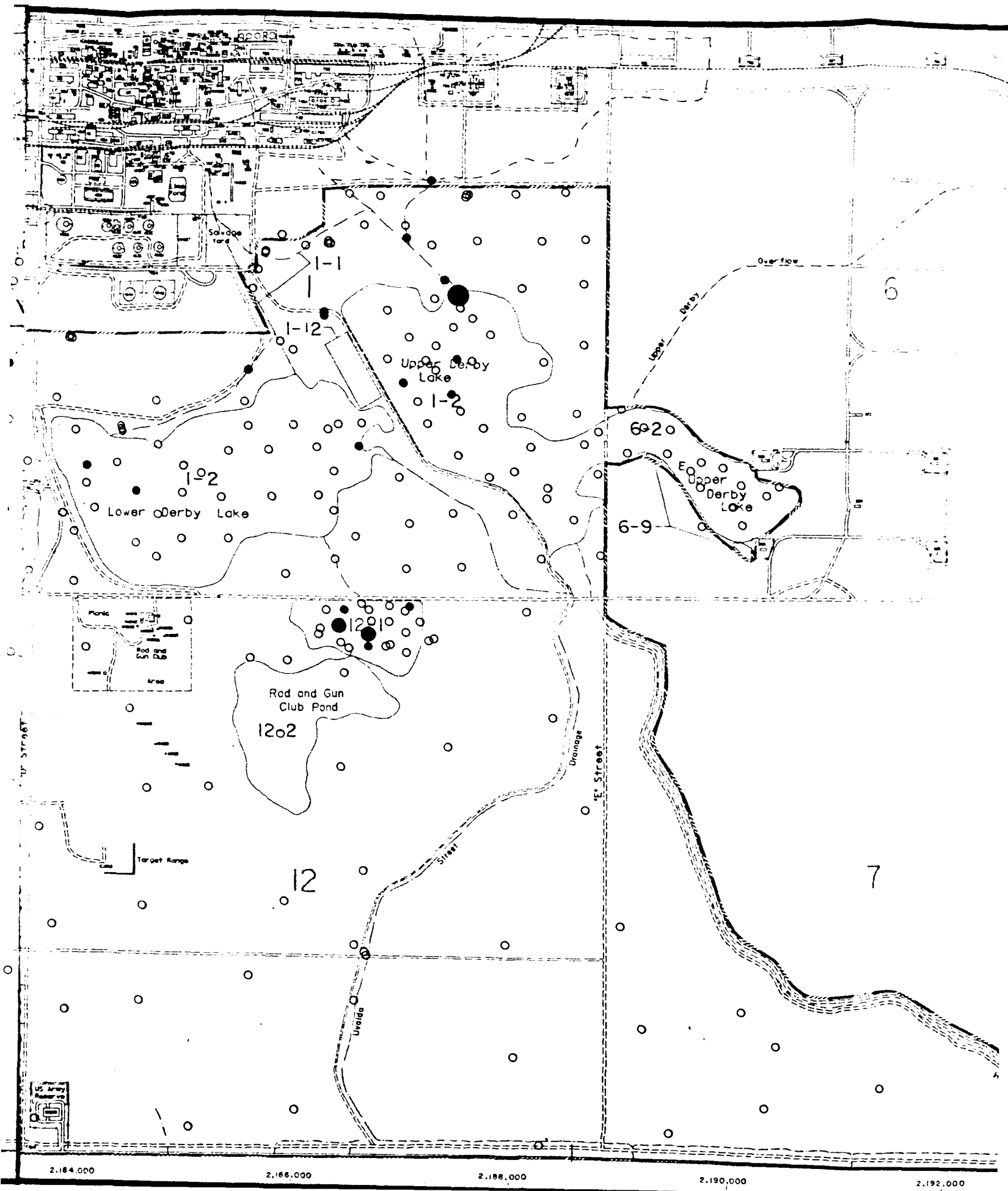
0 500 1000
SCALE: 1" = 1000'

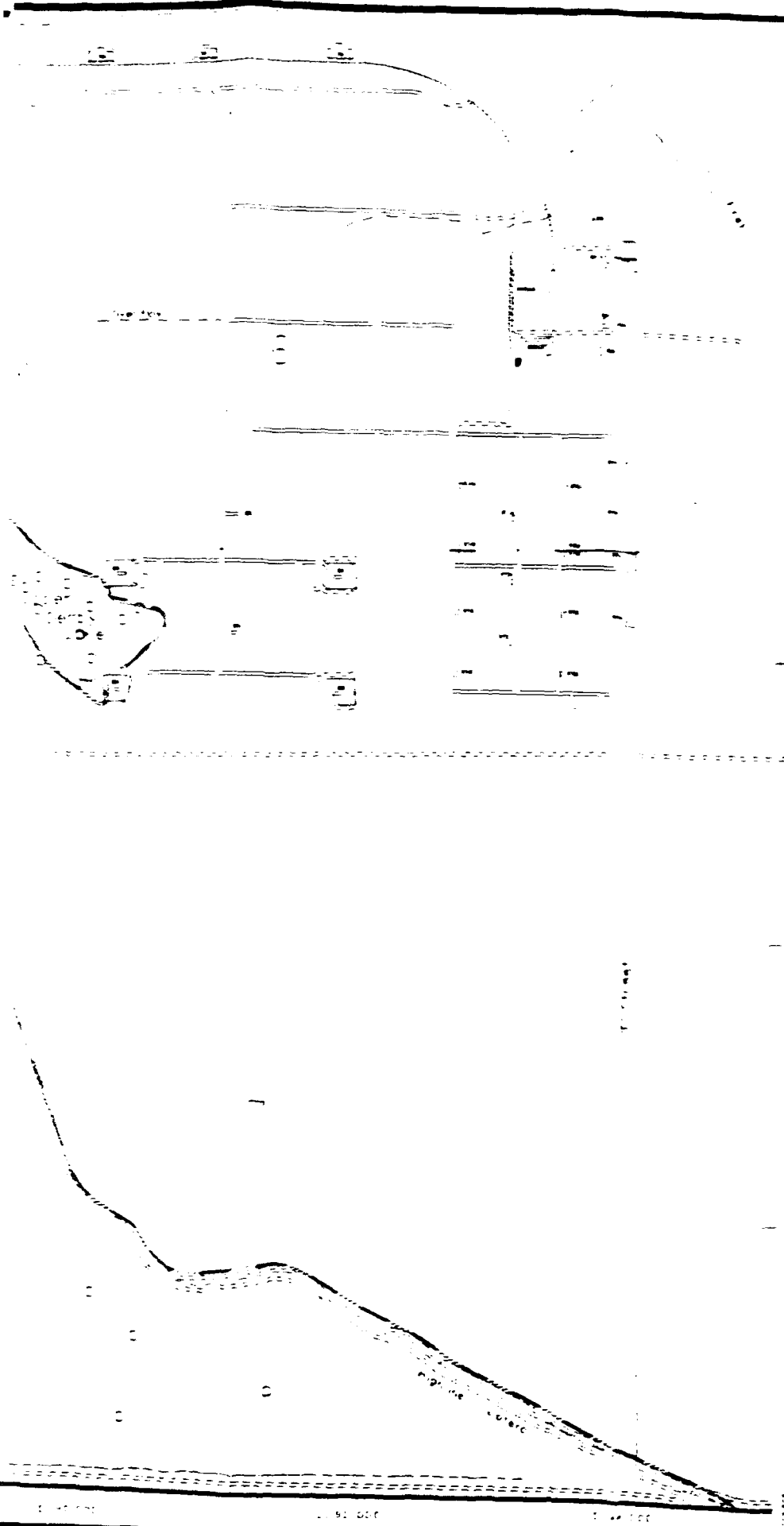
Prepared for:

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FIGURE: SSA 2.1-16
Organochlorine Pesticides in Soils in the 0-2 ft. Depth Interval. SUBGROUP 2 (Dichlorodiphenylethane, Dichlorodiphenyltrichloroethane, Chlordane)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







- LEGEND**
- == Improved Road
 - Unimproved Road
 - Railroad Tracks
 - Existing Structure
 - Former Structure
 - Fence
 - 6 Section Number
 - - - Stream or Ditch
 - Property Line Boundary
 - 10000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (PPM)

- Below Certified Reporting Limit (CRL)
- 0.001 - 0.01
- 0.01 - 0.1
- 0.1 - 1.0
- 1.0 - 10.0
- > 10.0

ROCKY MOUNTAIN ARSENAL LOCATION

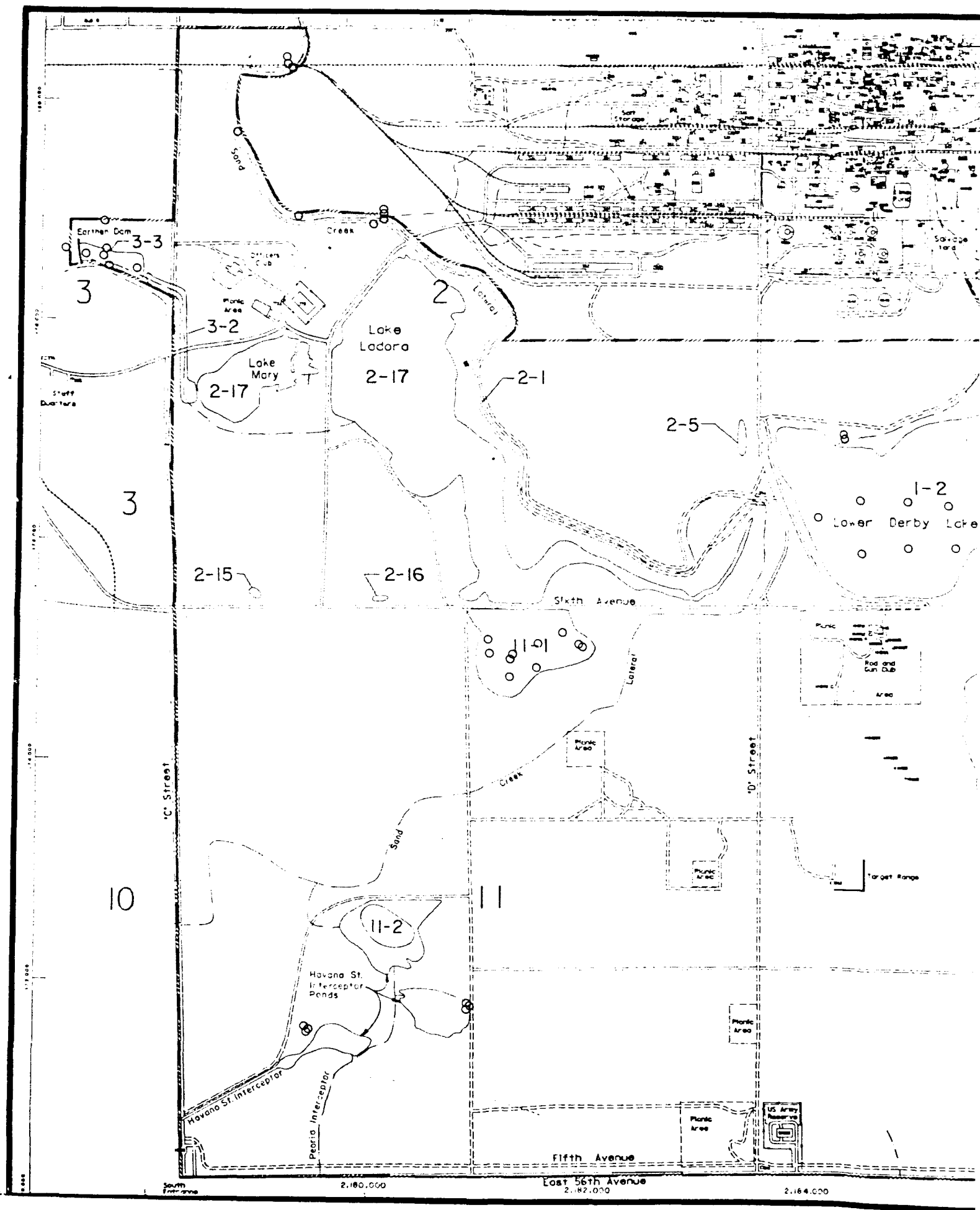
70	2	3	4	5
70	2	3	4	5
70	2	3	4	5
70	2	3	4	5
70	2	3	4	5

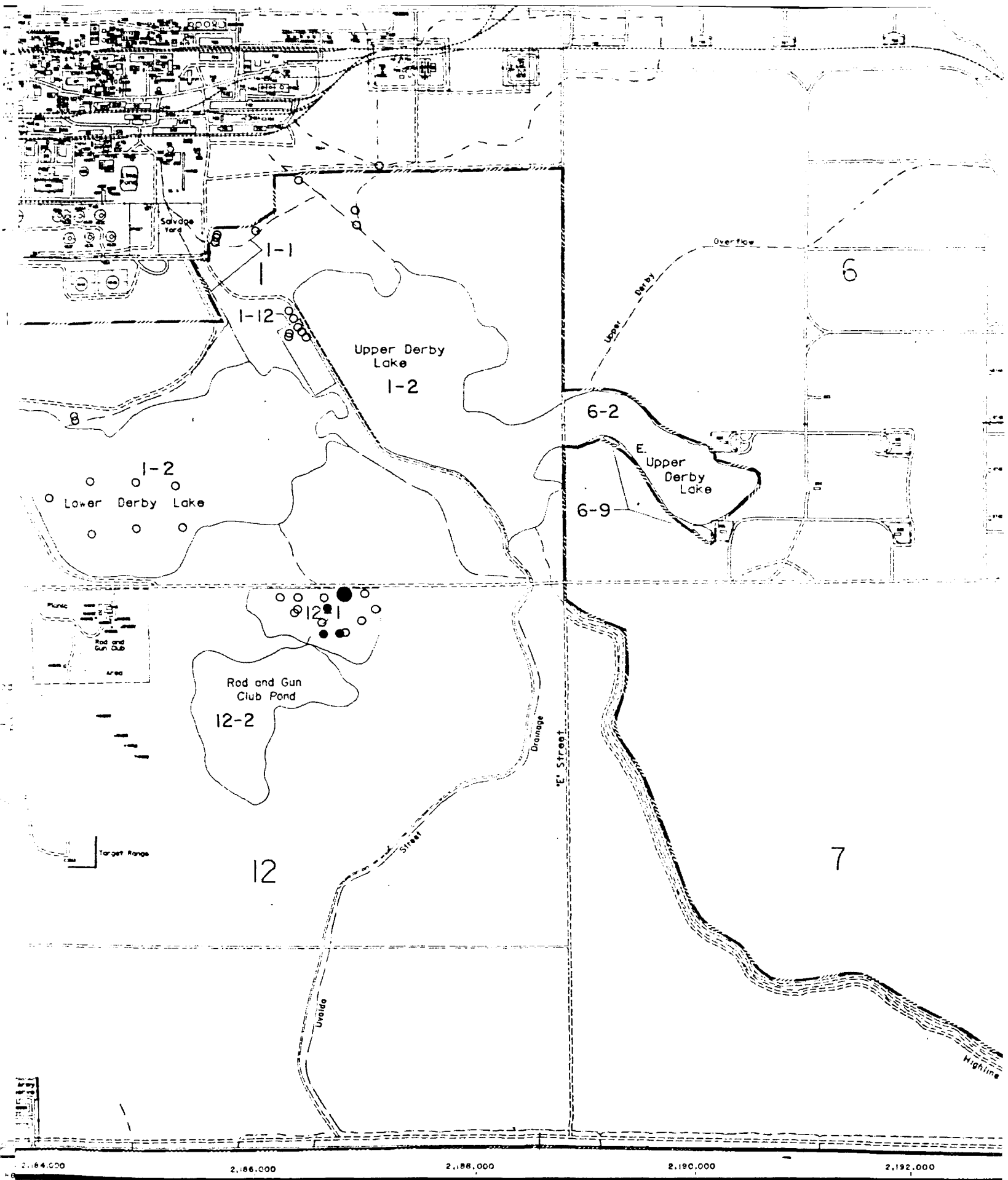
10000

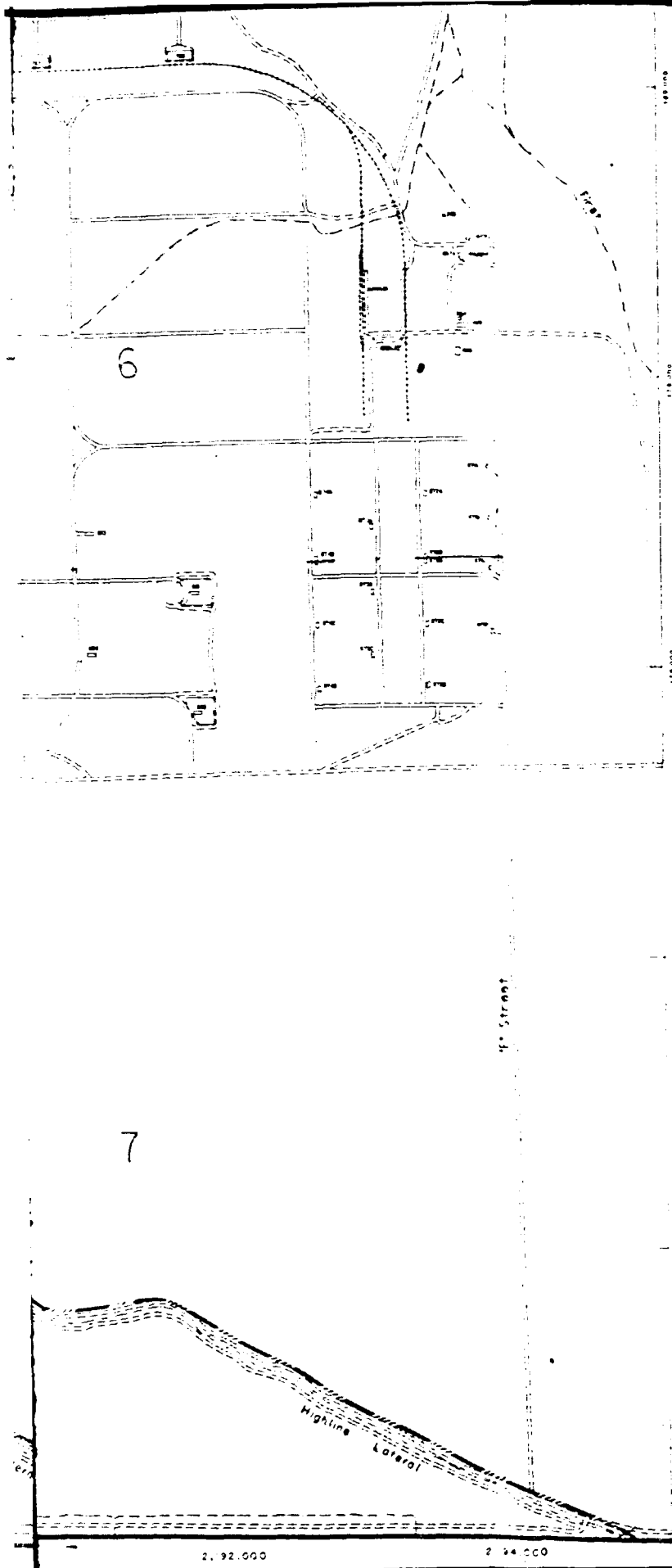
0 500 1000
SCALE 1:1000

Prepared for:
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Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2-1-7
Organochlorine Residues in Soils in the 2-E-5
Coffin Interim SUBGROUP 2 (Organochlorine Residues)
Organochlorine Residues in Soils in the 2-E-5
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

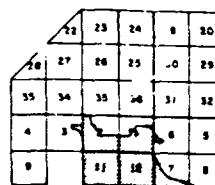
- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL)
- 0.001-1.0
- > 1.0-10
- > 10-100
- > 100

ROCKY MOUNTAIN ARSENAL LOCATION



0 500 1000
SCALE: 1" = 1000'

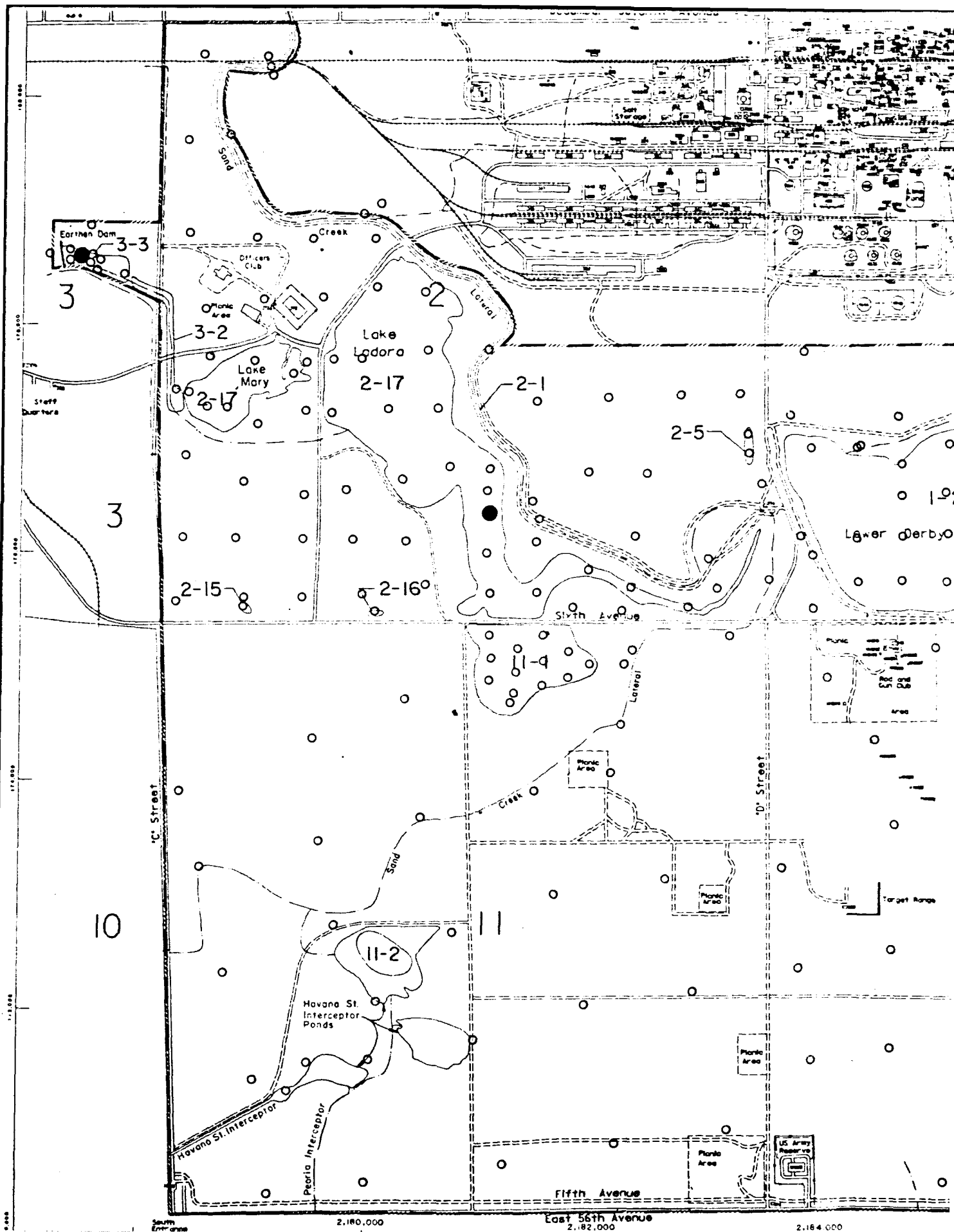
Prepared for:

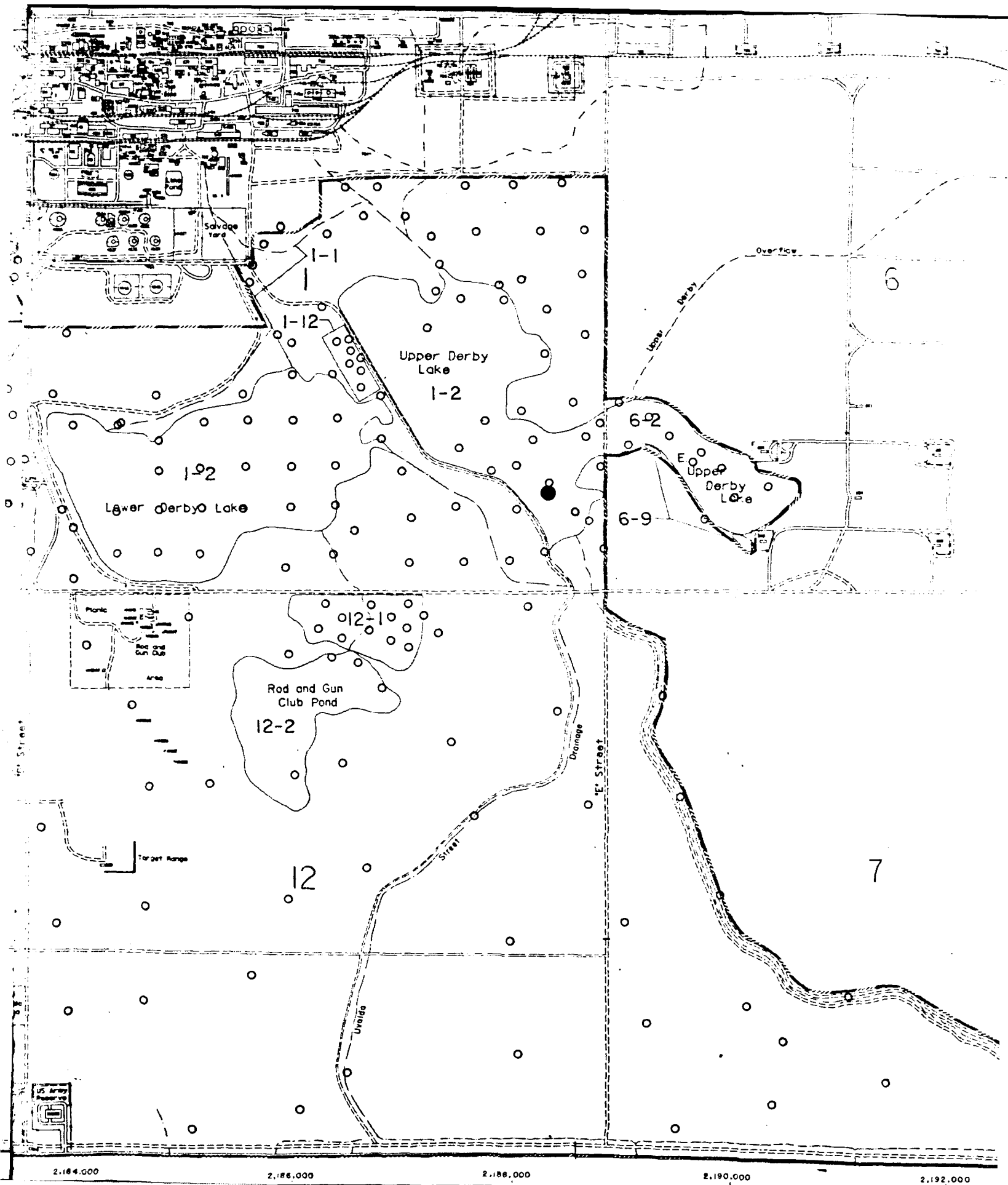
Program Manager's Office for
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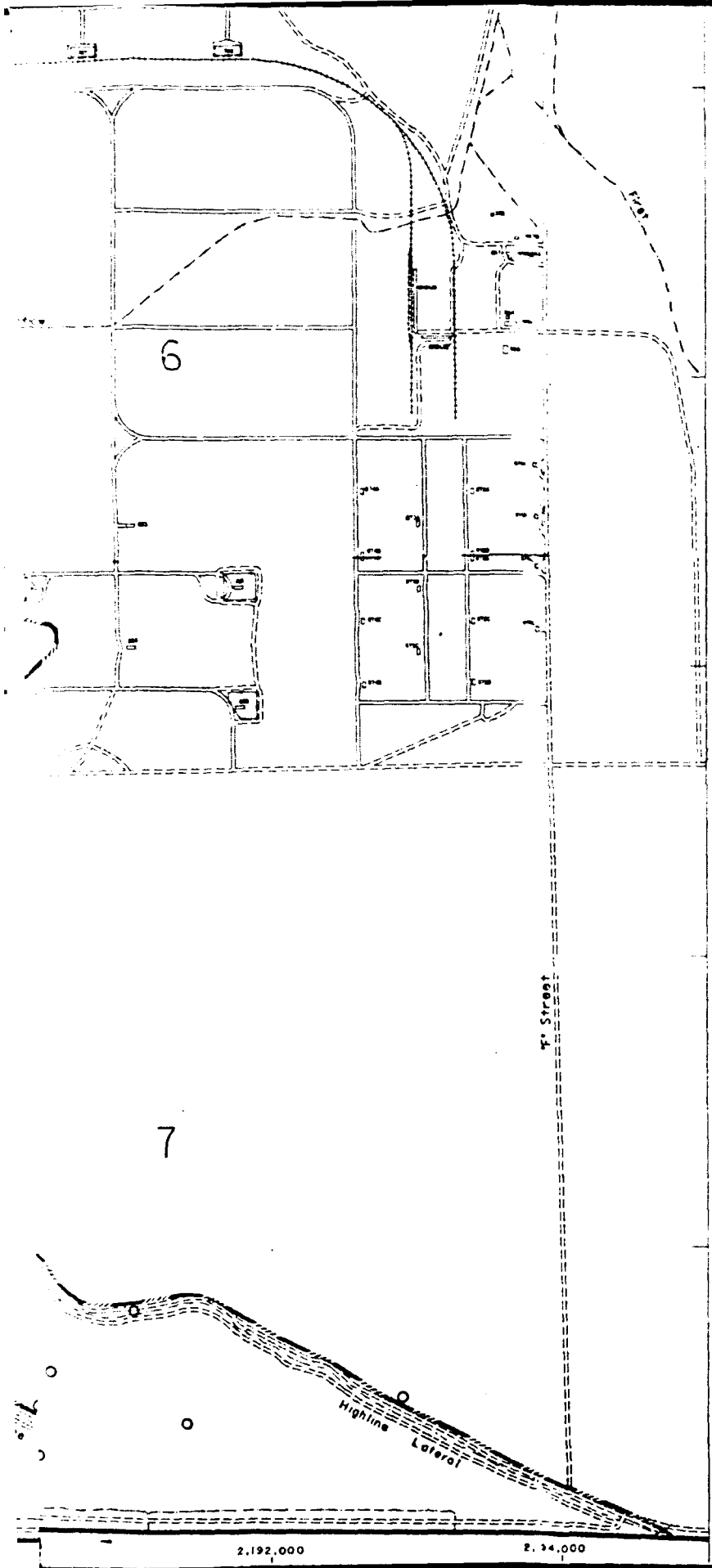
FIGURE: SSA 2.1-18

Organochlorine Pesticides in Soils in the 5-20 ft.
Depth Interval, SUBGROUP 2 (Dichlorodiphenylethane,
Dichlorodiphenylmethane, Dieldrin)

Rocky Mountain Arsenal
Prepared by:
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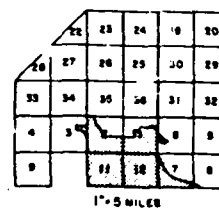
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

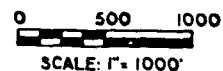
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL) to 10 (Indicator Level)
- > 10 - 100
- > 100 - 1,000
- > 1,000

ROCKY MOUNTAIN ARSENAL LOCATION



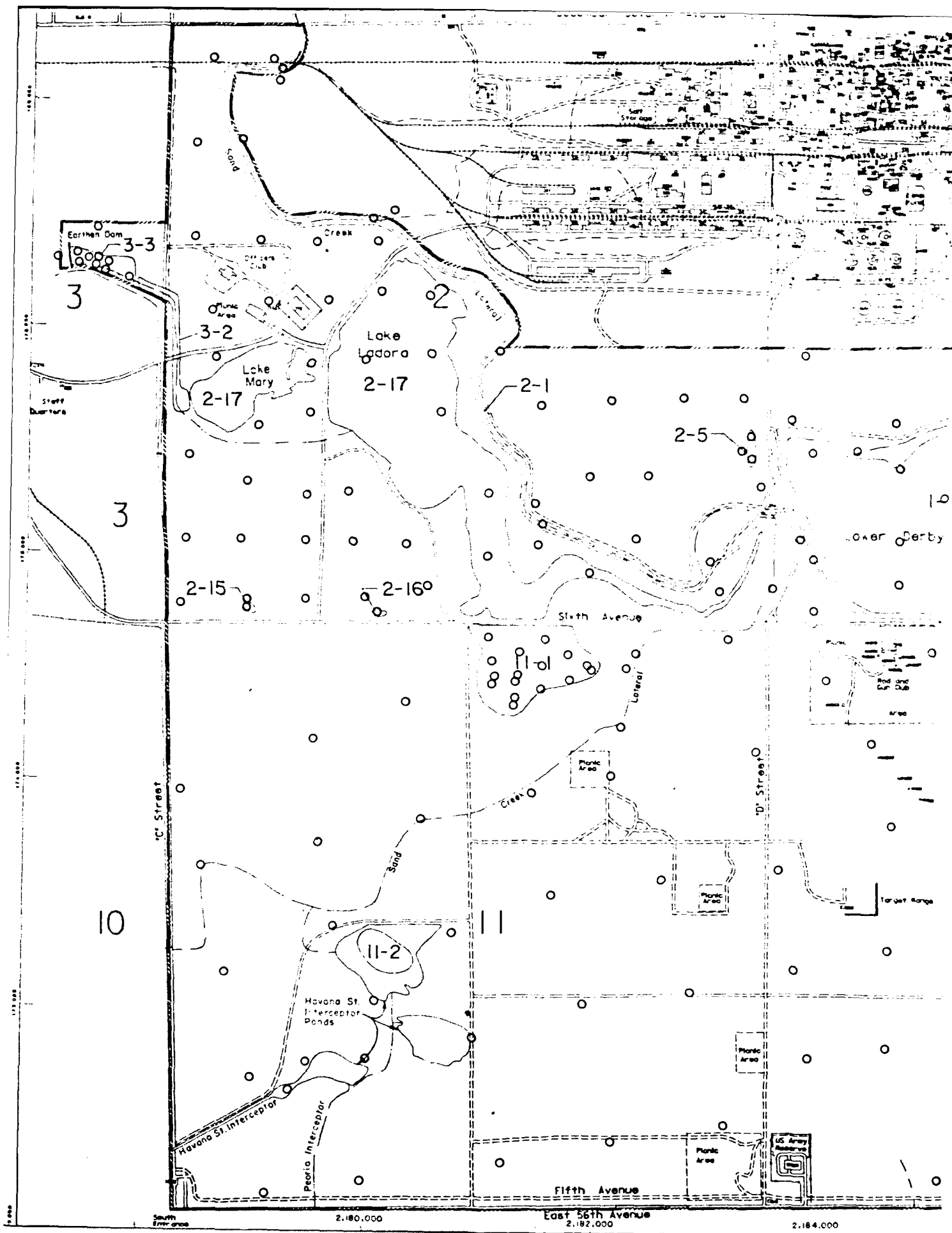
1" = 5 MILES

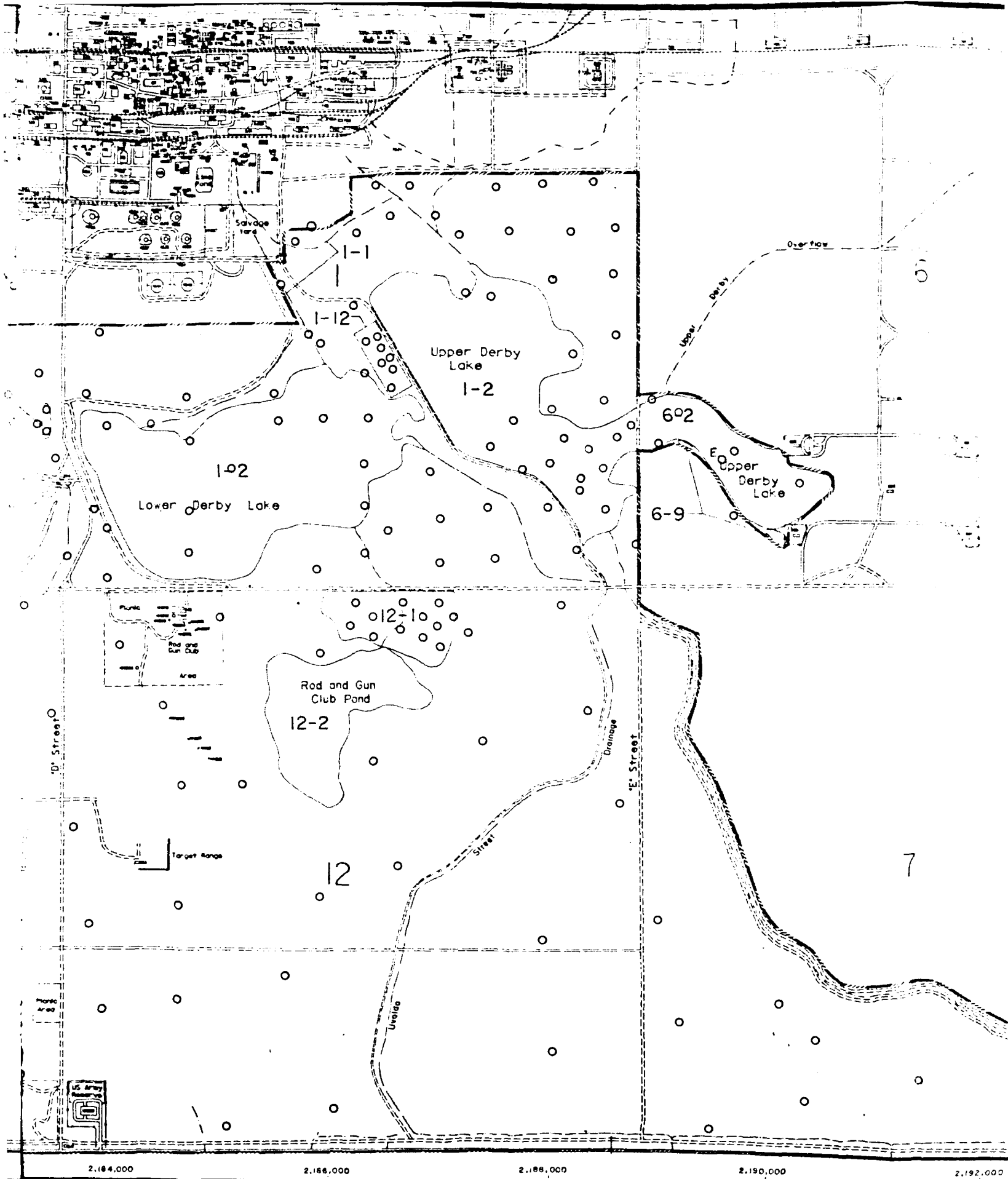


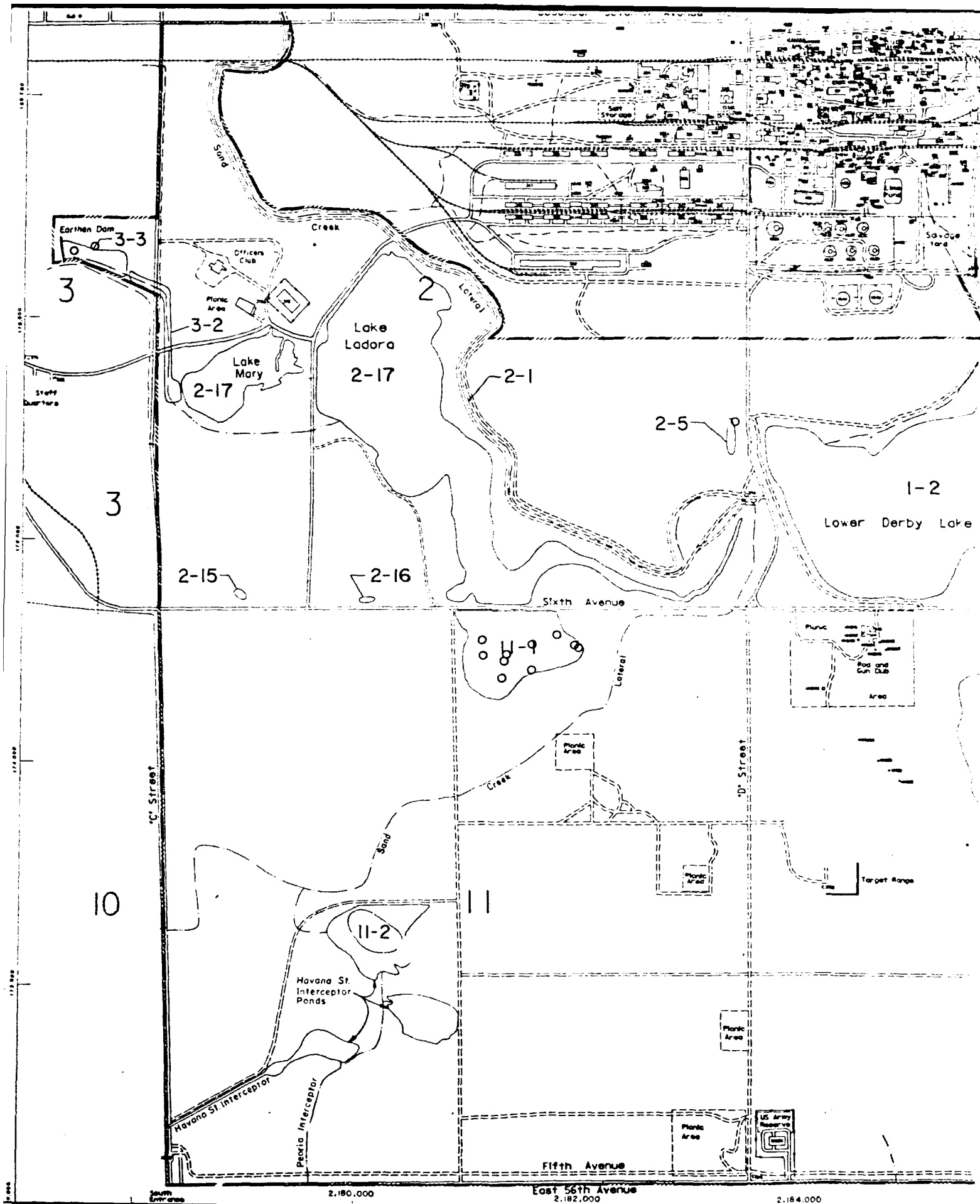
Prepared for:

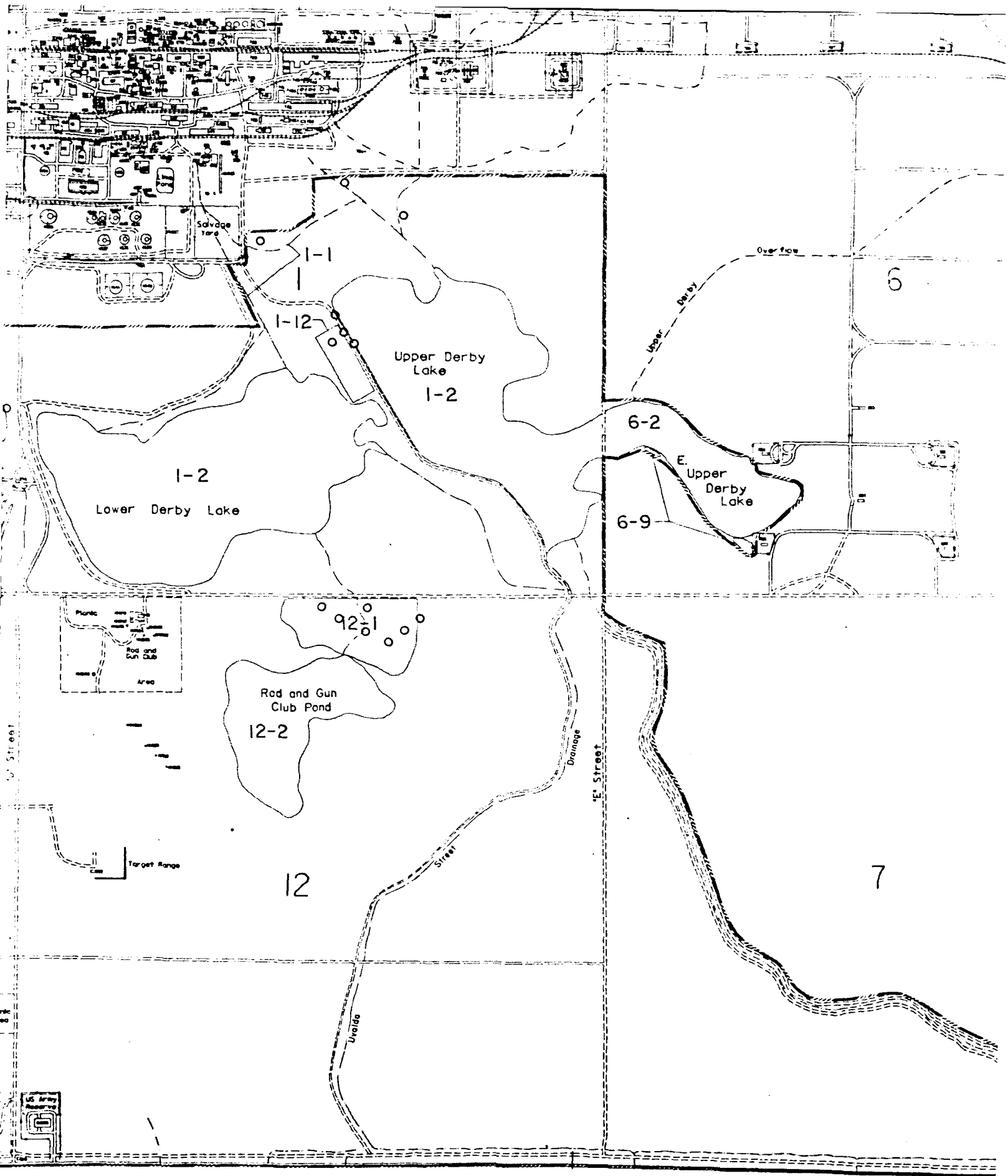
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

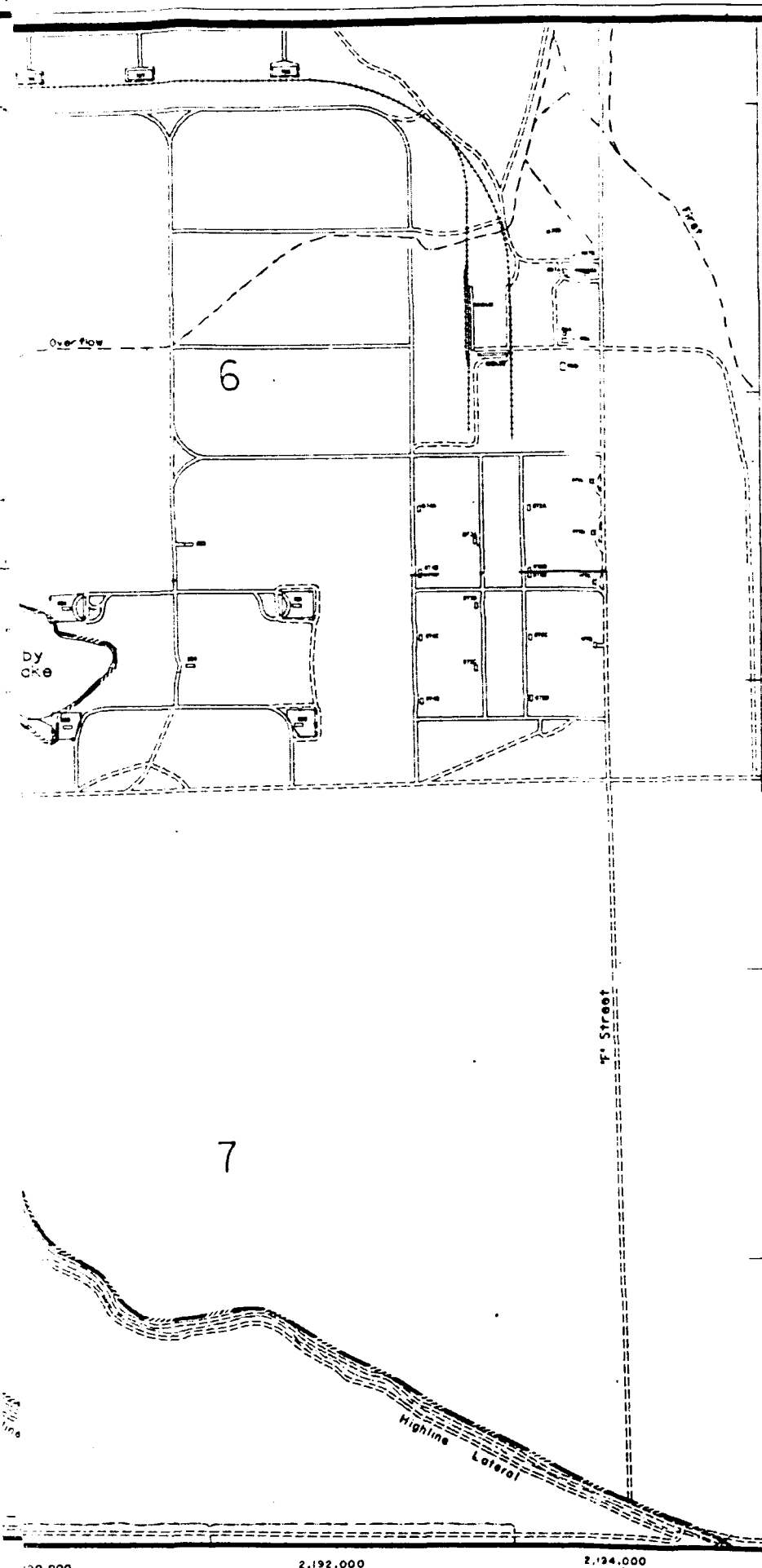
FIGURE: SSA 2.1-19
Arsenic in Soils
in the 0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated











LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

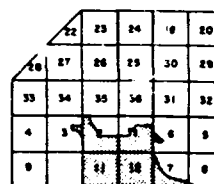
○ Below Certified Reporting Limit (BCRL) to 10 (Indicator Level)

● >10-100

● >100-1,000

● >1,000

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

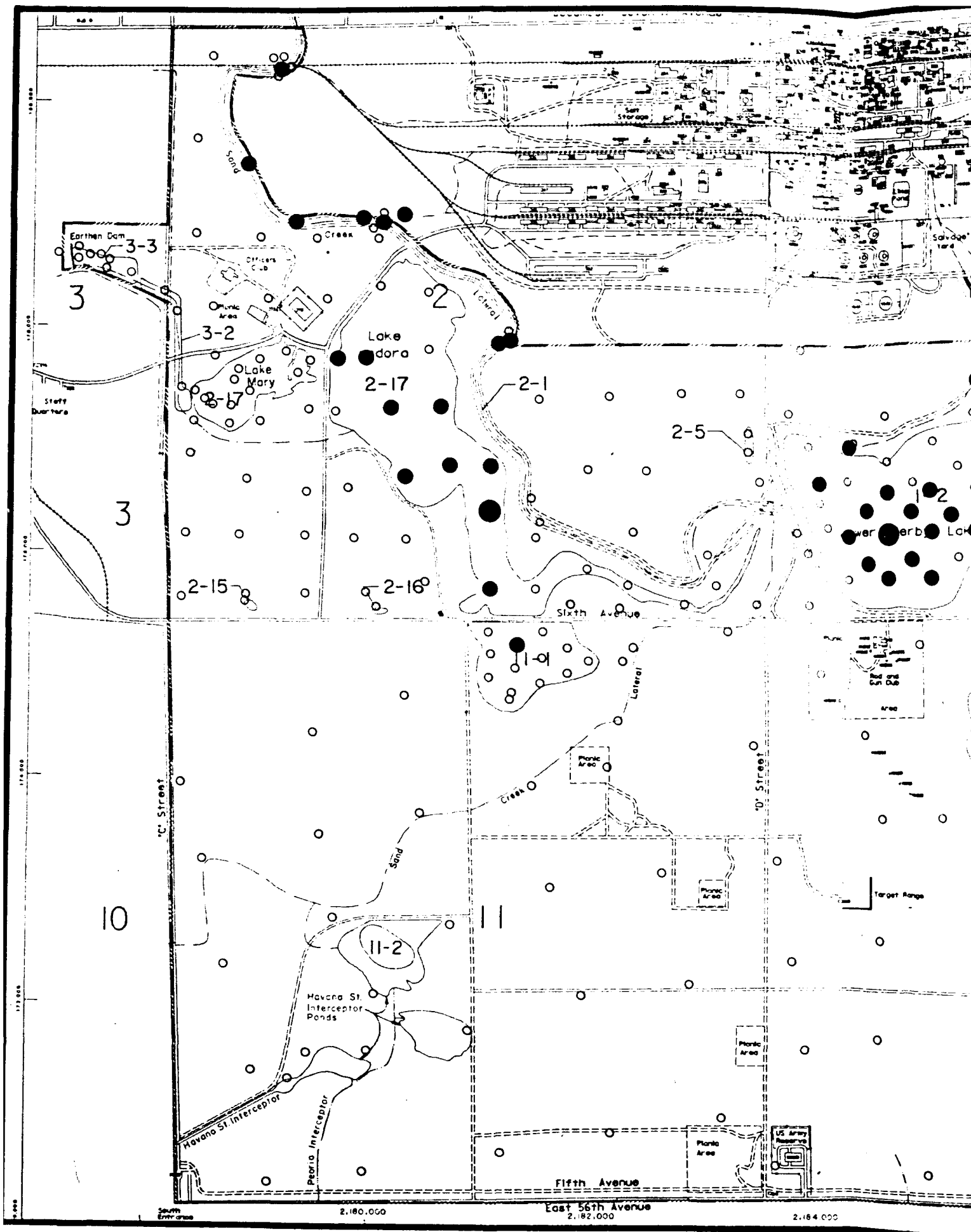


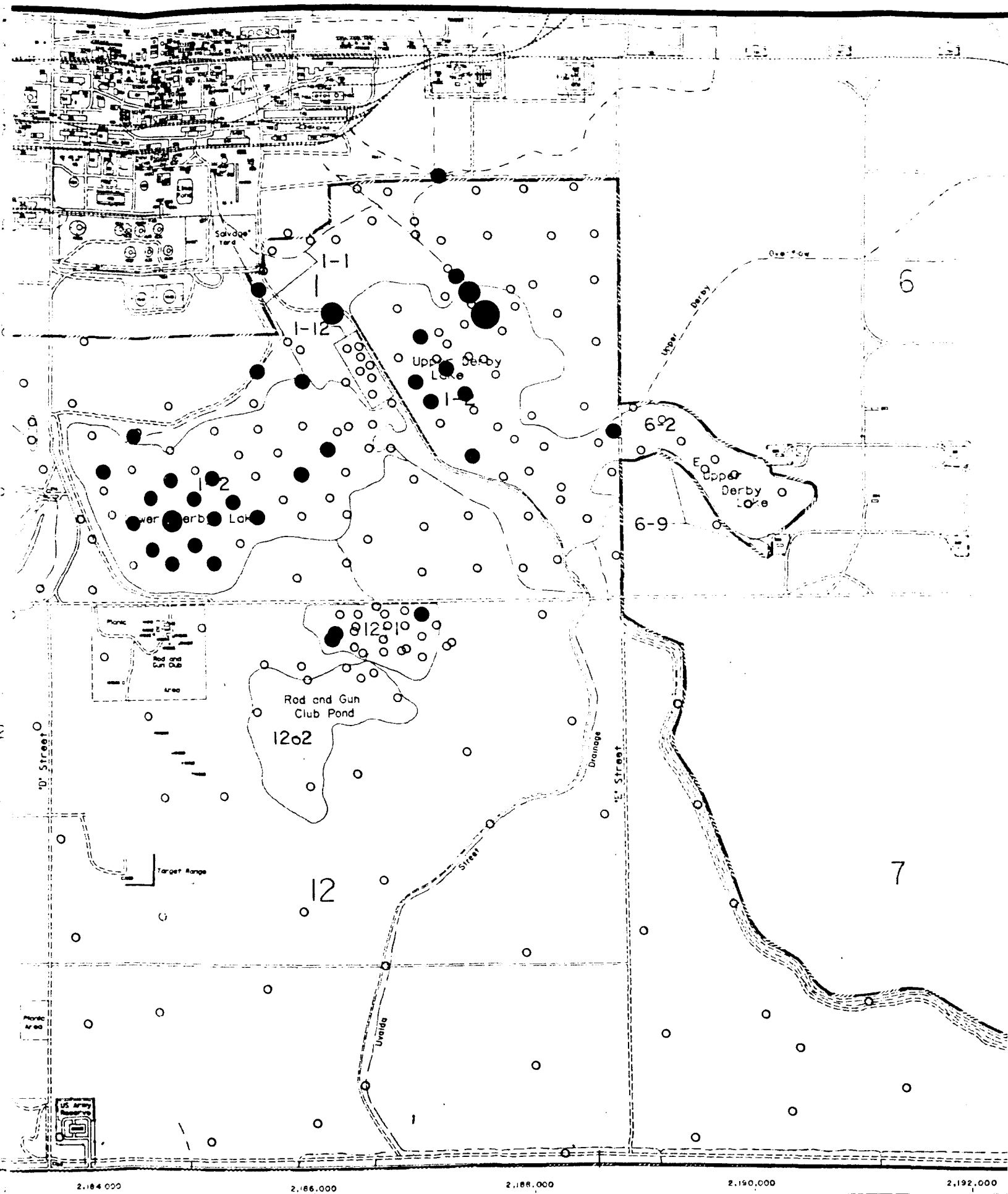
SCALE: 1" = 1000'

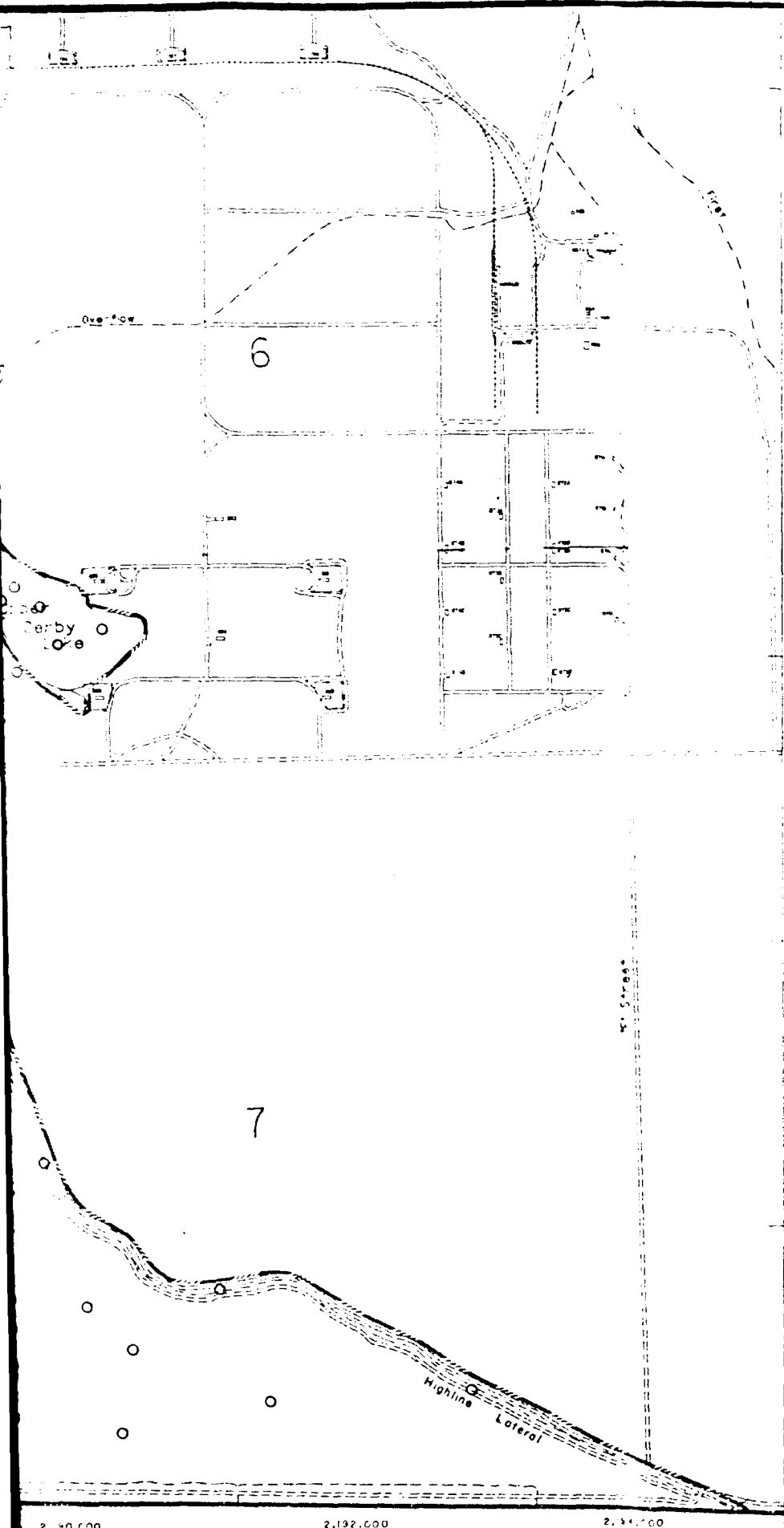
Prepared for:

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Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-21
Arsenic in Soils
in the 5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

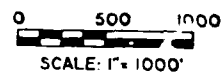
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL) to 0.10 (Indicator Level)
- > 0.10 - 1.0
- > 1.0 - 10
- > 10

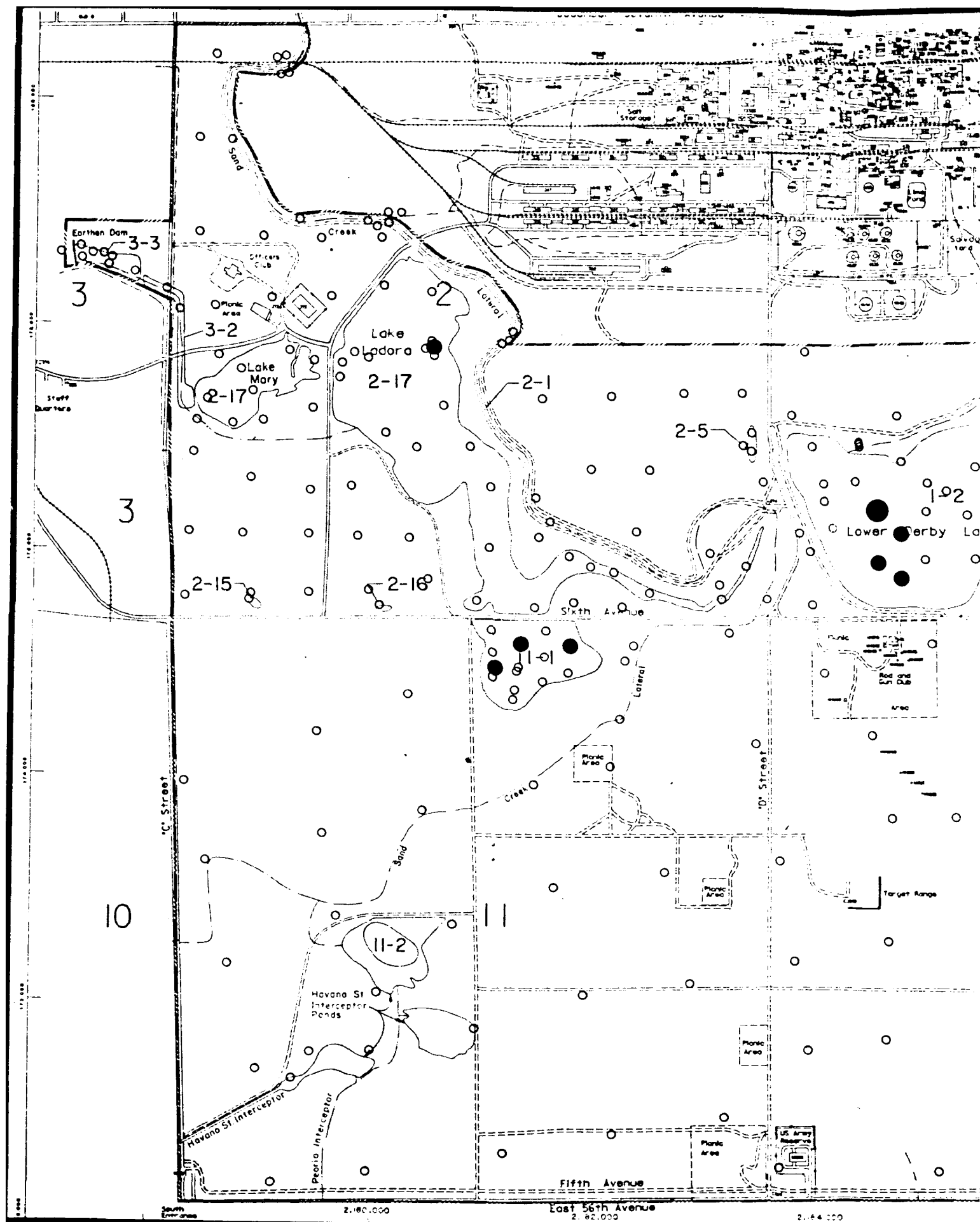
ROCKY MOUNTAIN ARSENAL LOCATION

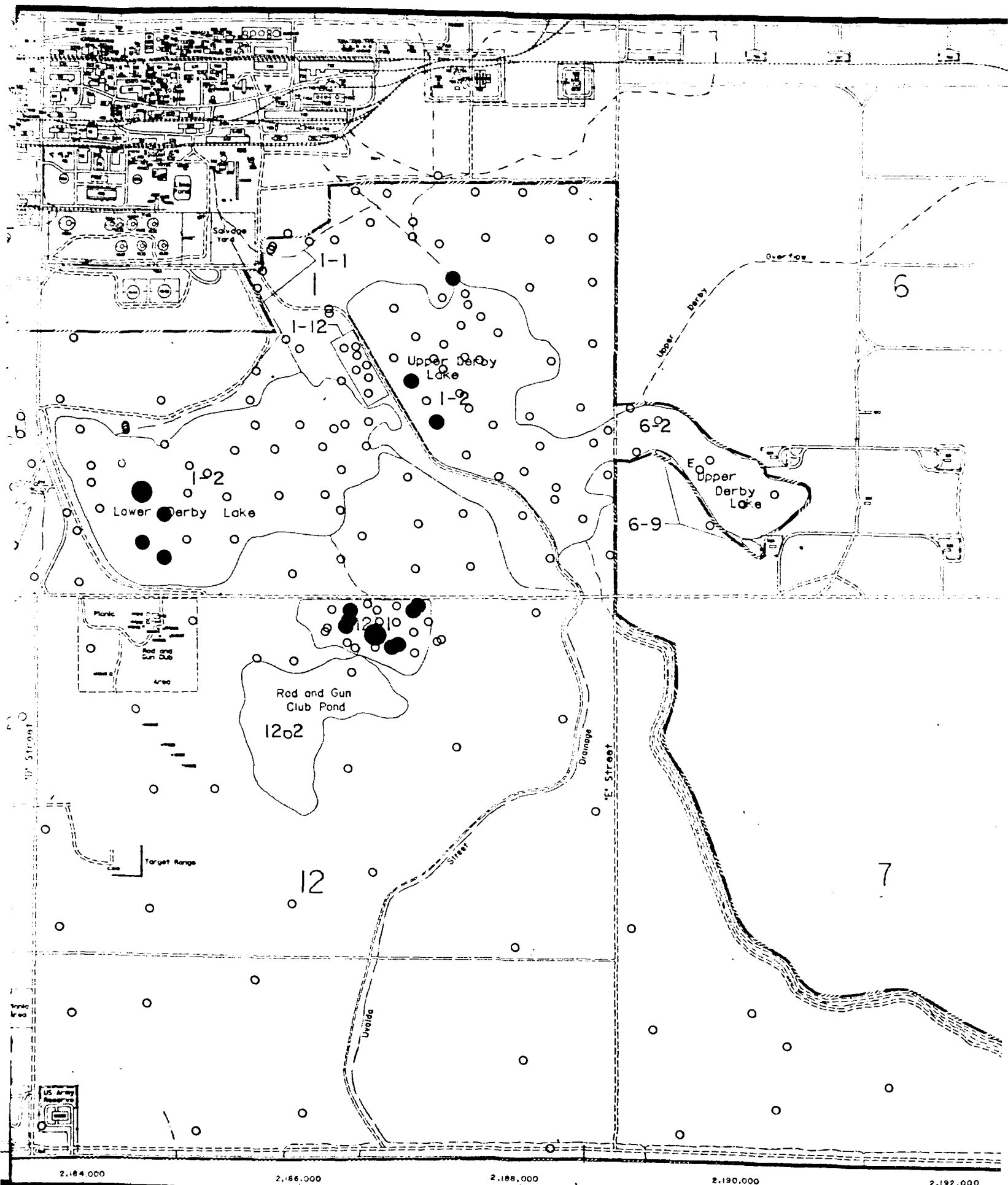


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FIGURE: SSA 2.1-22
Mercury in Soils
in the 0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





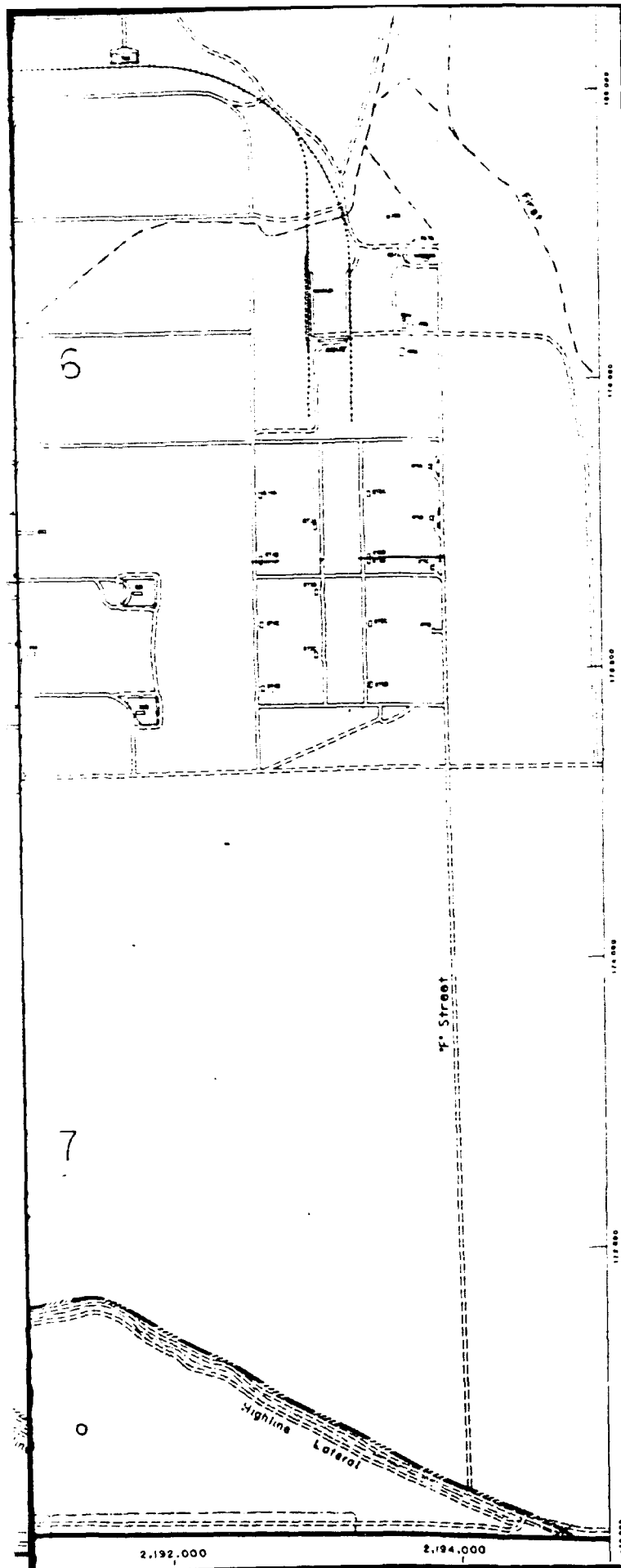
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

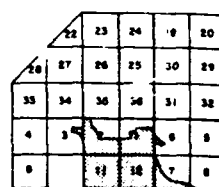
- Improved Road
- - - Unimproved Road
- +— Railroad Tracks
- ▭ Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary

174,000 State Plane Grid

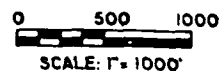
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL) to 0.10 (Indicator Level)
- > 0.10 - 1.0
- > 1.0 - 10
- > 10

ROCKY MOUNTAIN ARSENAL LOCATION



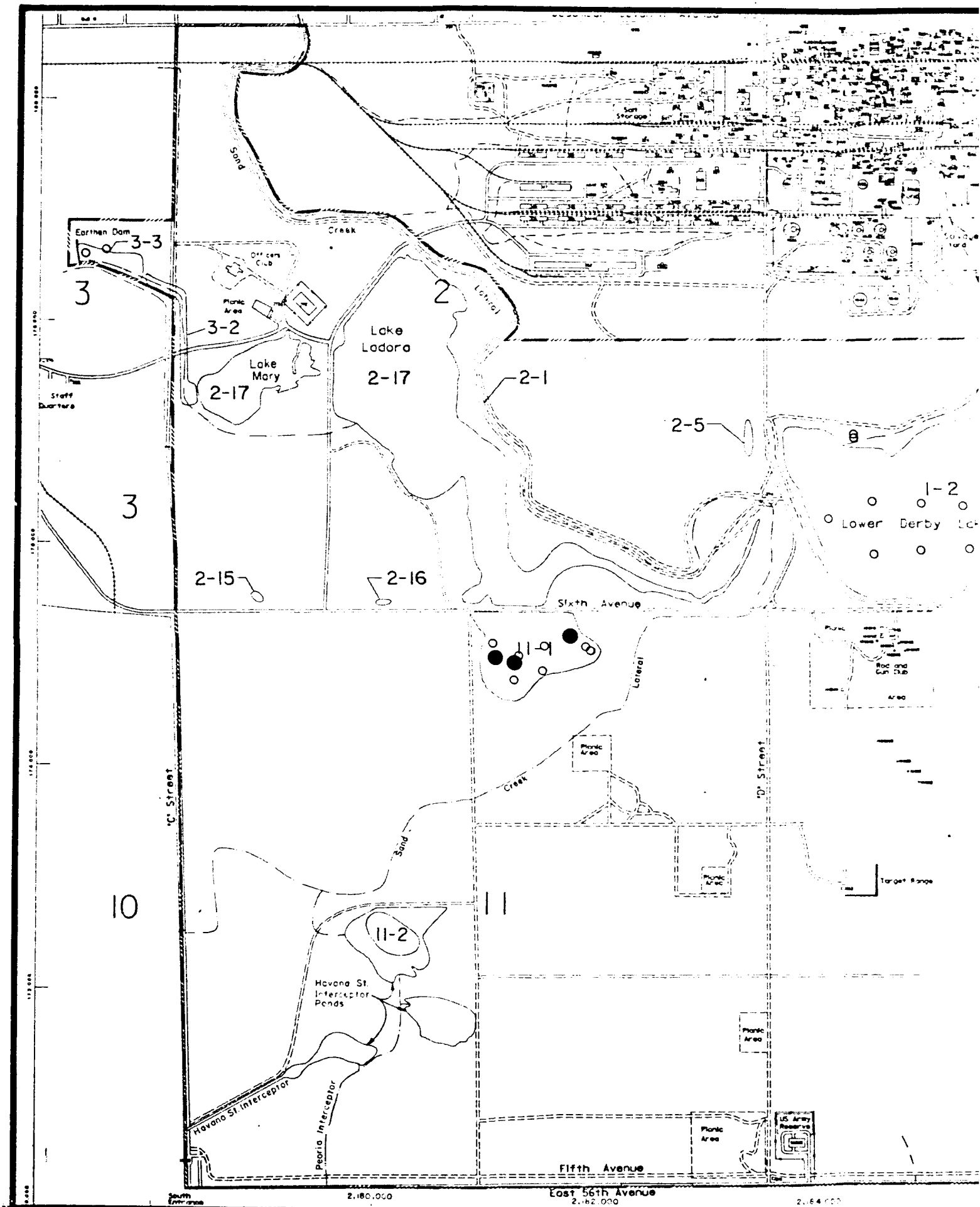
1" = 5 MILES

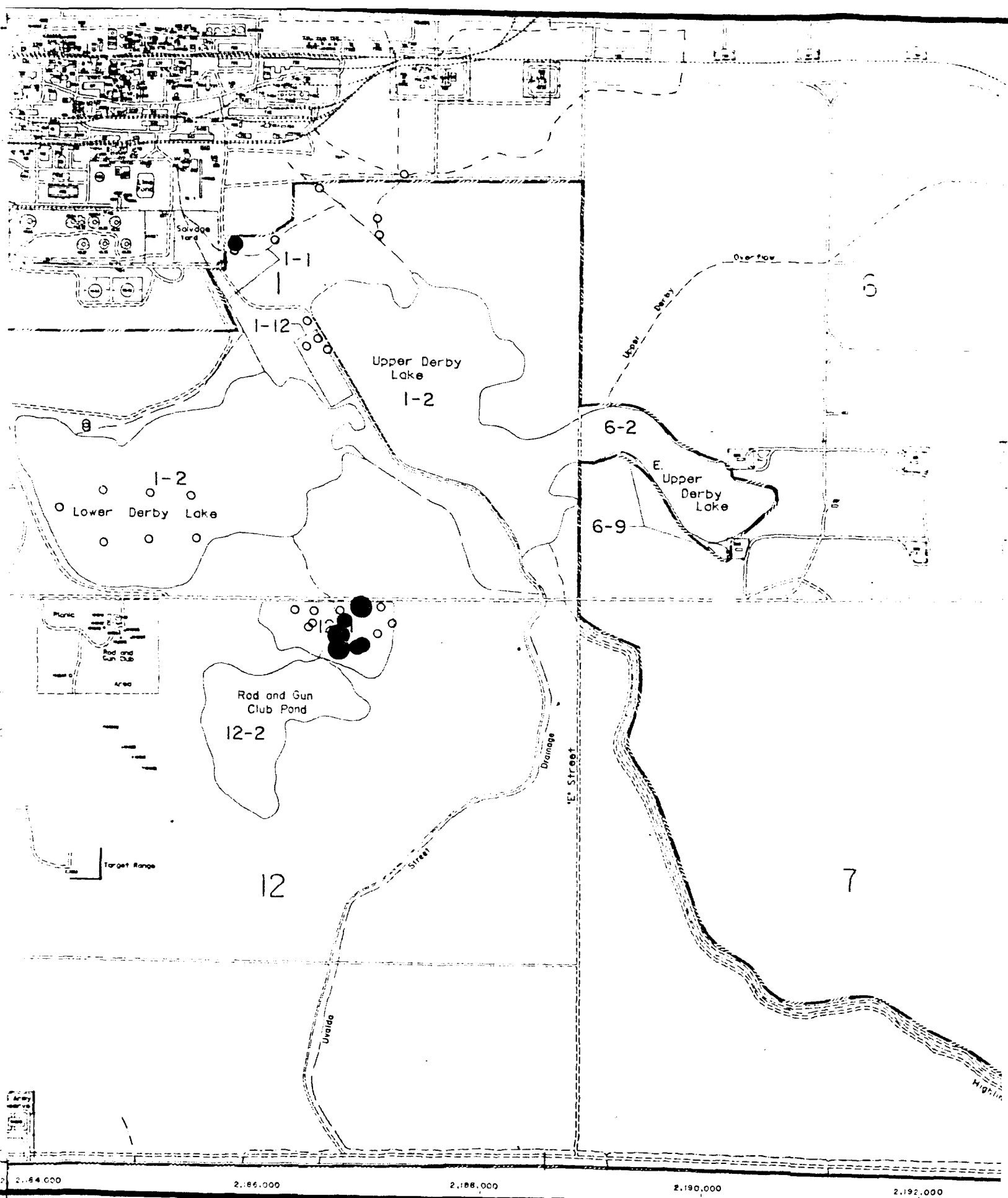


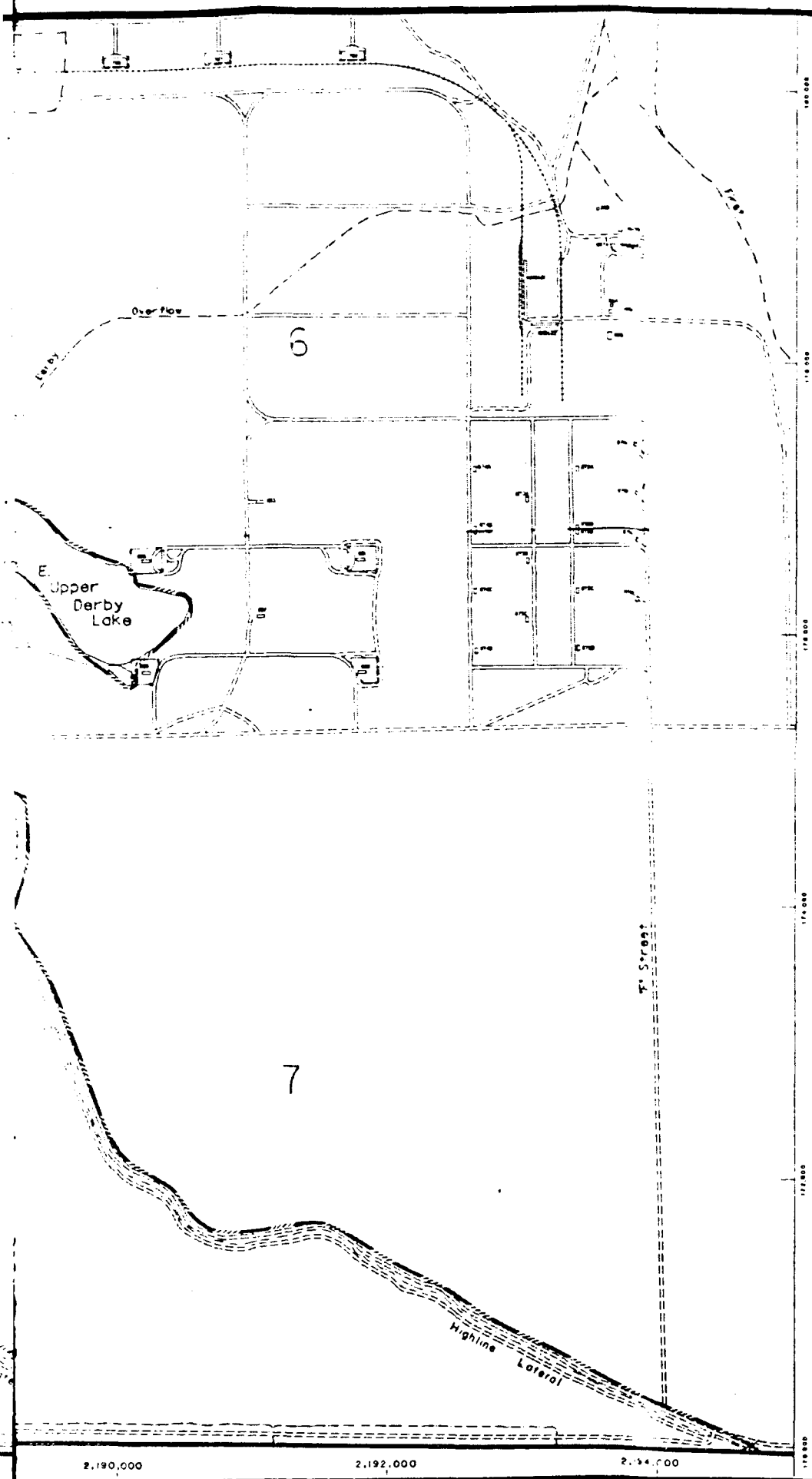
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-23
Mercury in Soils
in the 2-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

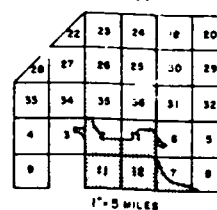
- Improved Road
- - - - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- - - - - Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

- Below Certified Reporting Limit (BCRL) to 0.10 (Indicator Level)
- > 0.10 - 1.0
- > 1.0 - 10
- > 10

ROCKY MOUNTAIN ARSENAL LOCATION

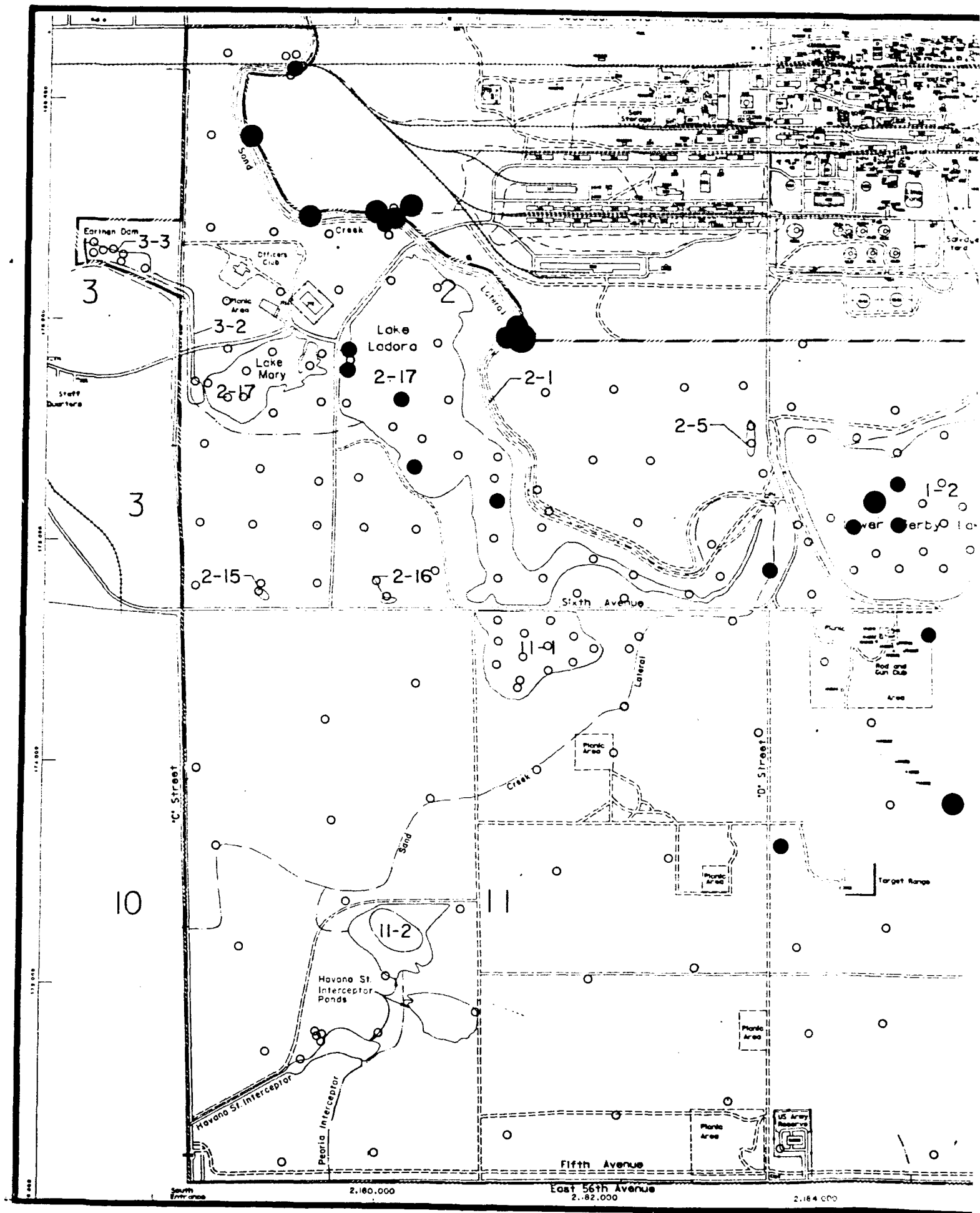


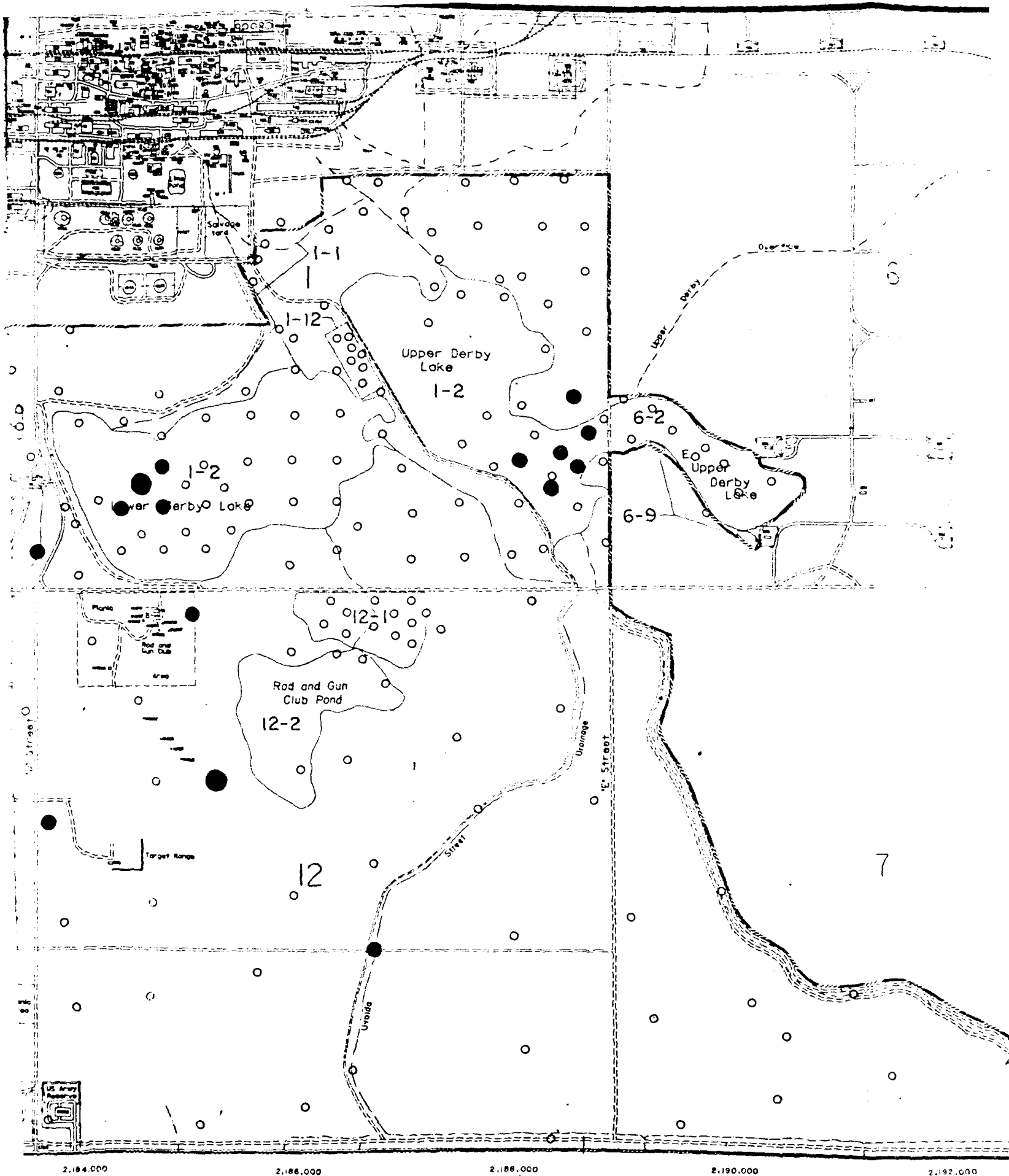
0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-24
Mercury in Soils
in the 5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





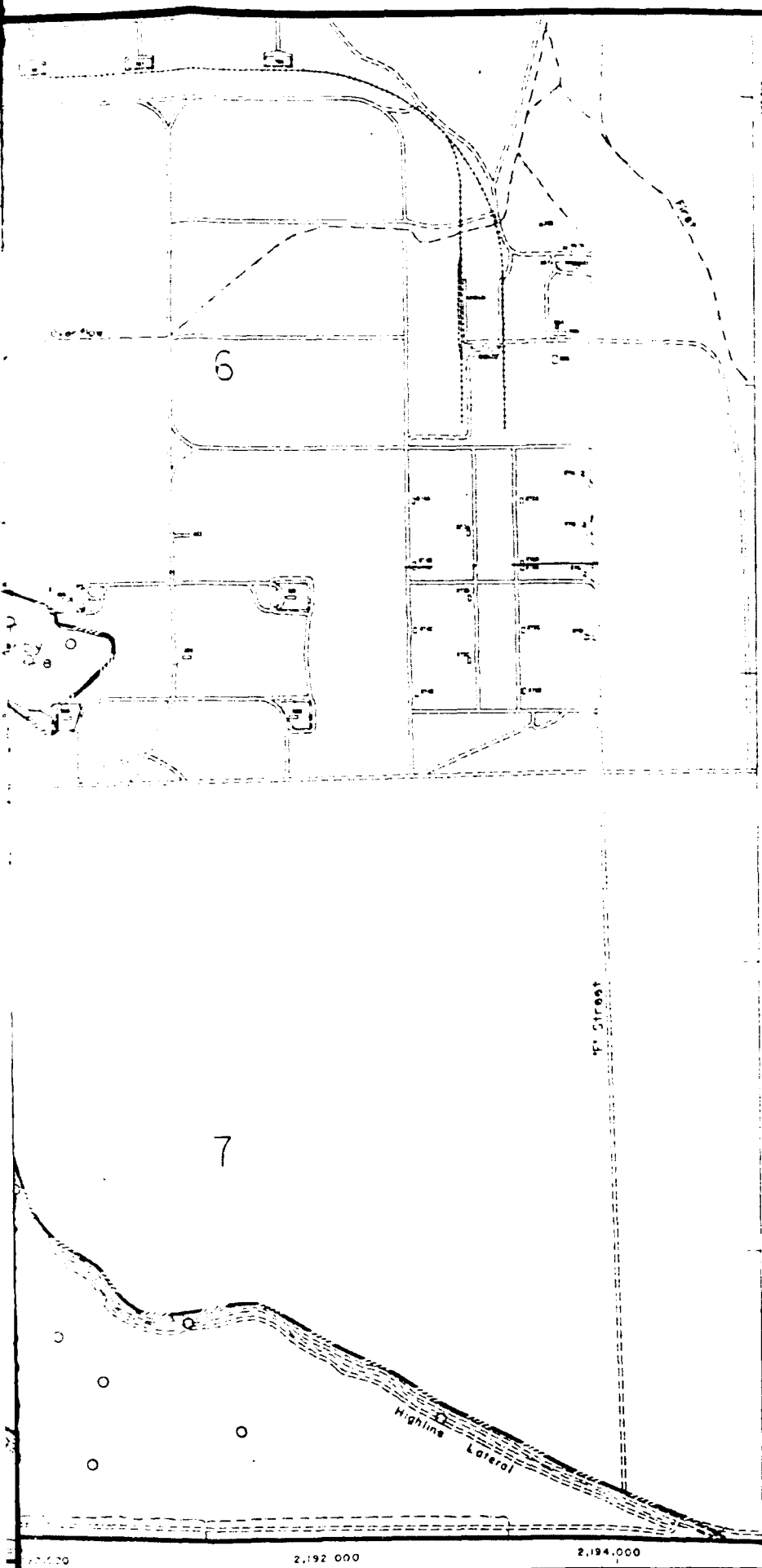
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

Cd	Cr	Cu	Pb	Zn
○ BCRL-2.0	BCRL-40	BCRL-35	BCRL-40	BCRL-80
● >2.0-10	>40-100	>35-100	>40-100	>80-1,000
● >10-100	>100-1,000	>100-1,000	>100-1,000	>1,000-10,000
● >100	>1,000	>1,000	>1,000	>10,000

ROCKY MOUNTAIN ARSENAL LOCATION

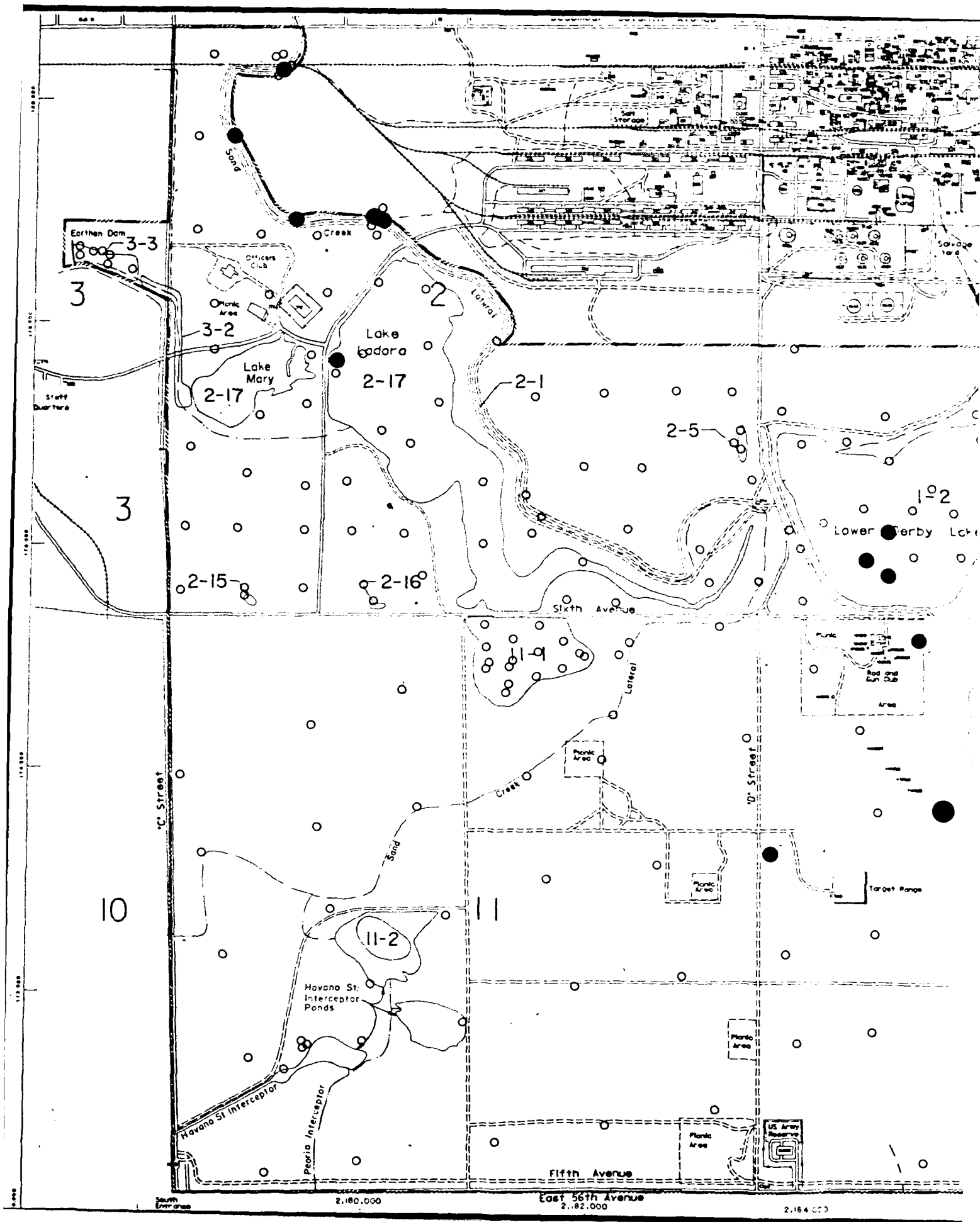


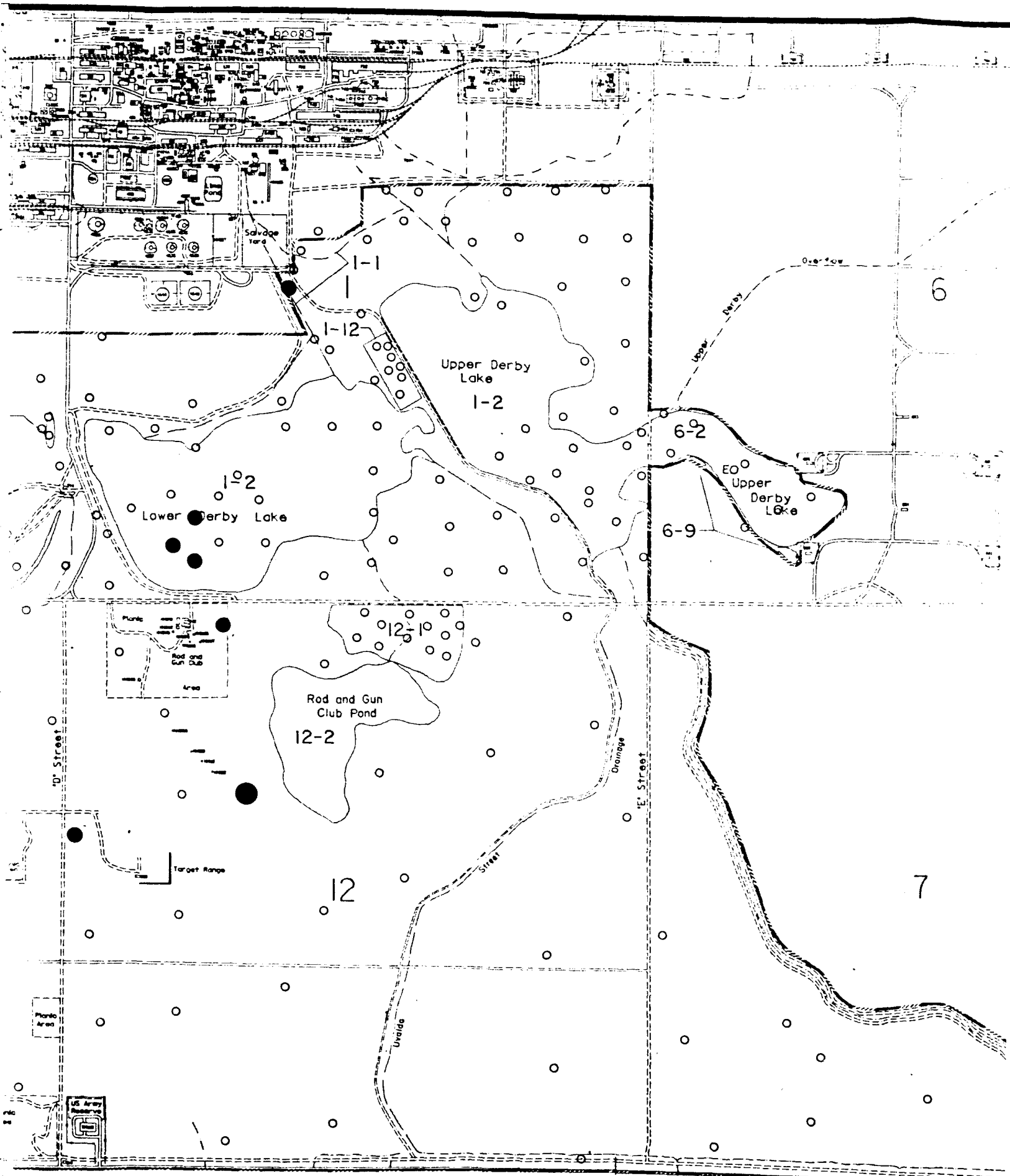
0 500 1000
SCALE: 1" = 1000'

Prepared for:

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Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.1-25
ICP Metals in Soils
in the 0-2 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





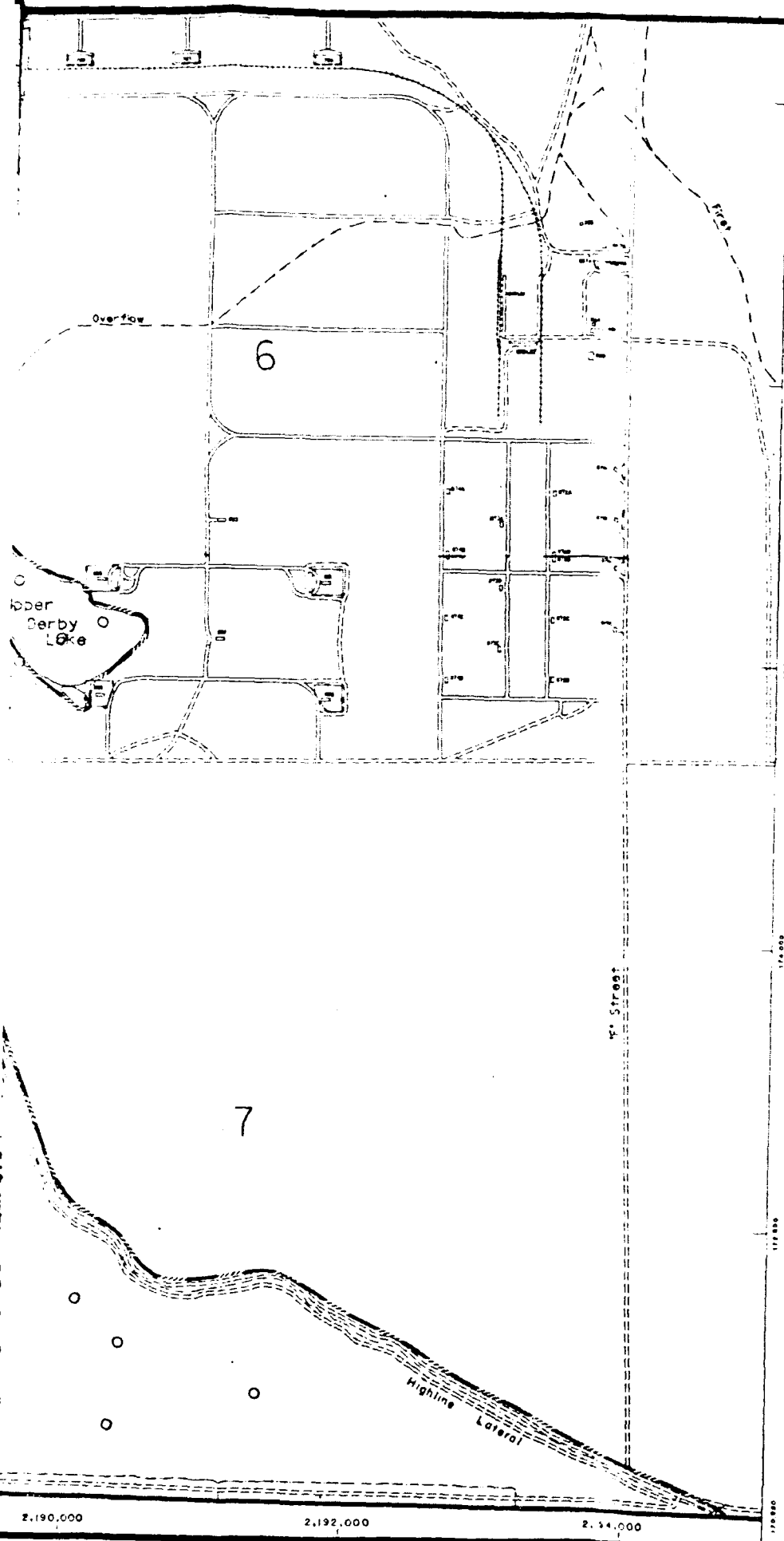
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

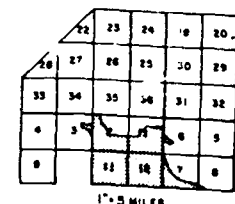
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

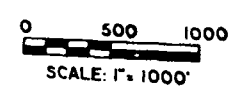
ANALYTE SAMPLE LOCATION AND CONCENTRATION (ug/g)

Cd	Cr	Cu	Pb	Zn
○ BQRL-2.0	BQRL-40	BQRL-35	BQRL-40	BQRL-80
● >2.0-10	>40-100	>35-100	>40-100	>80-1,000
● >10-100	>100-1,000	>100-1,000	>100-1,000	>1,000-10,000
● >100	>1,000	>1,000	>1,000	>10,000

ROCKY MOUNTAIN ARSENAL LOCATION

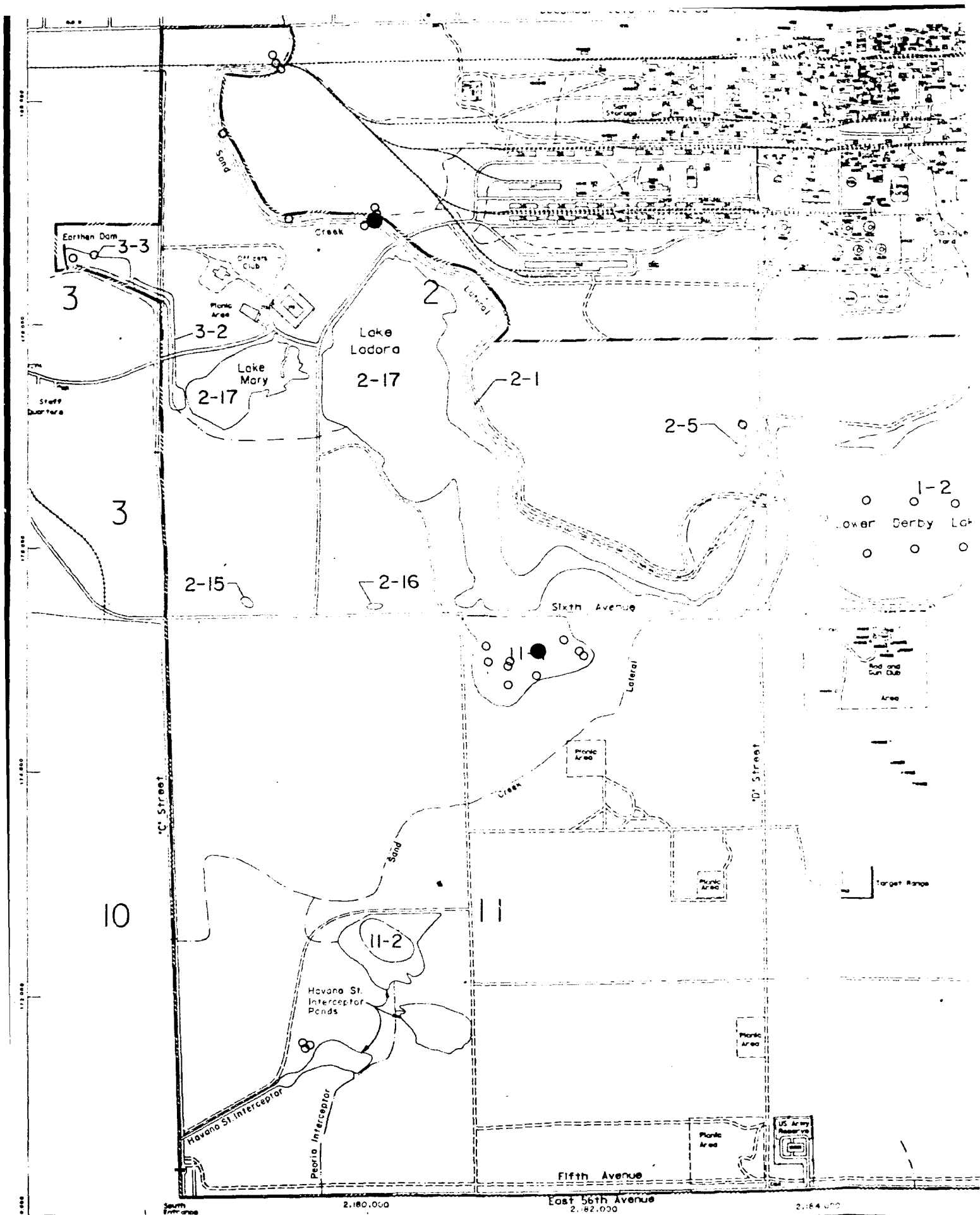


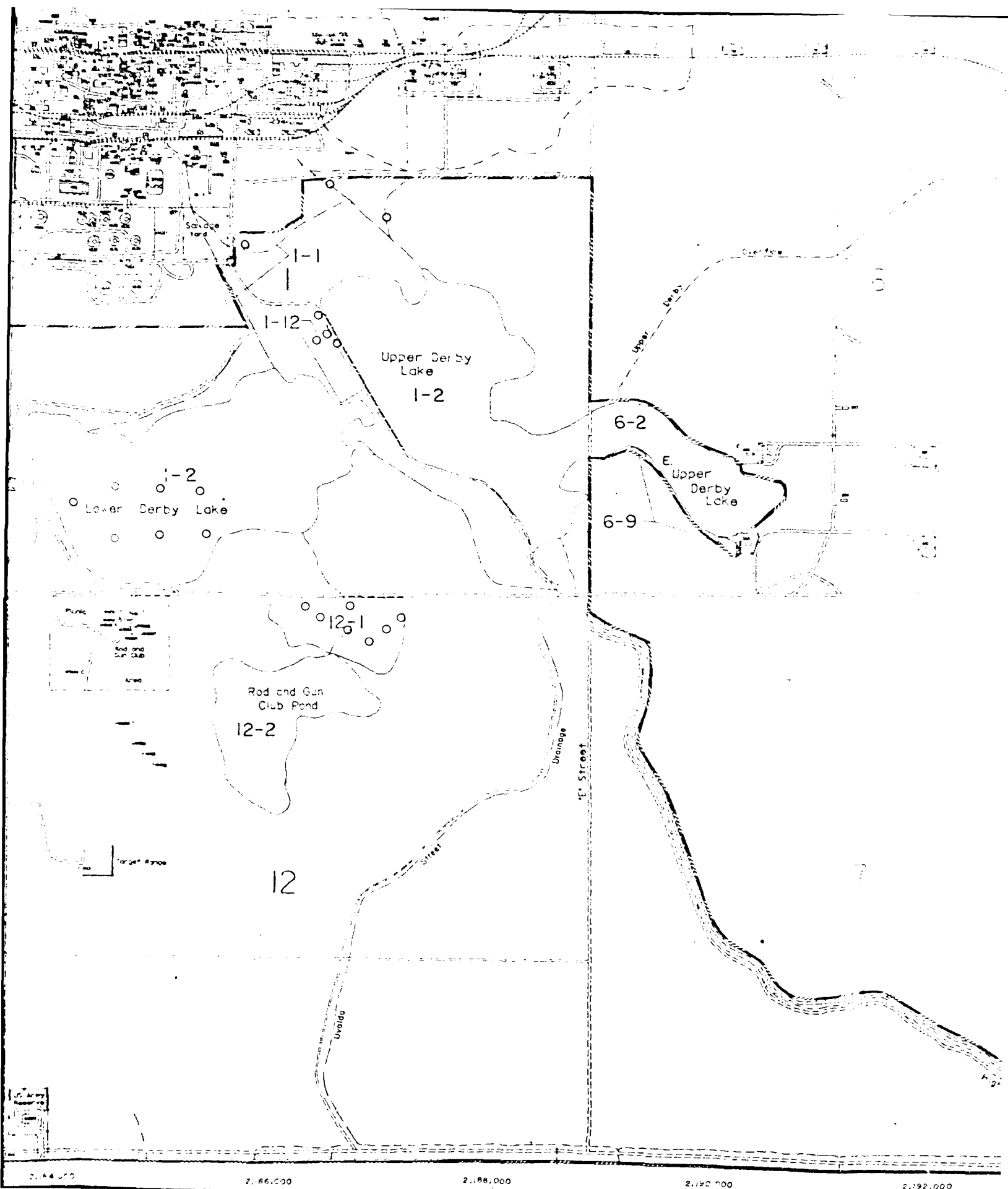
1" = 5 MILES

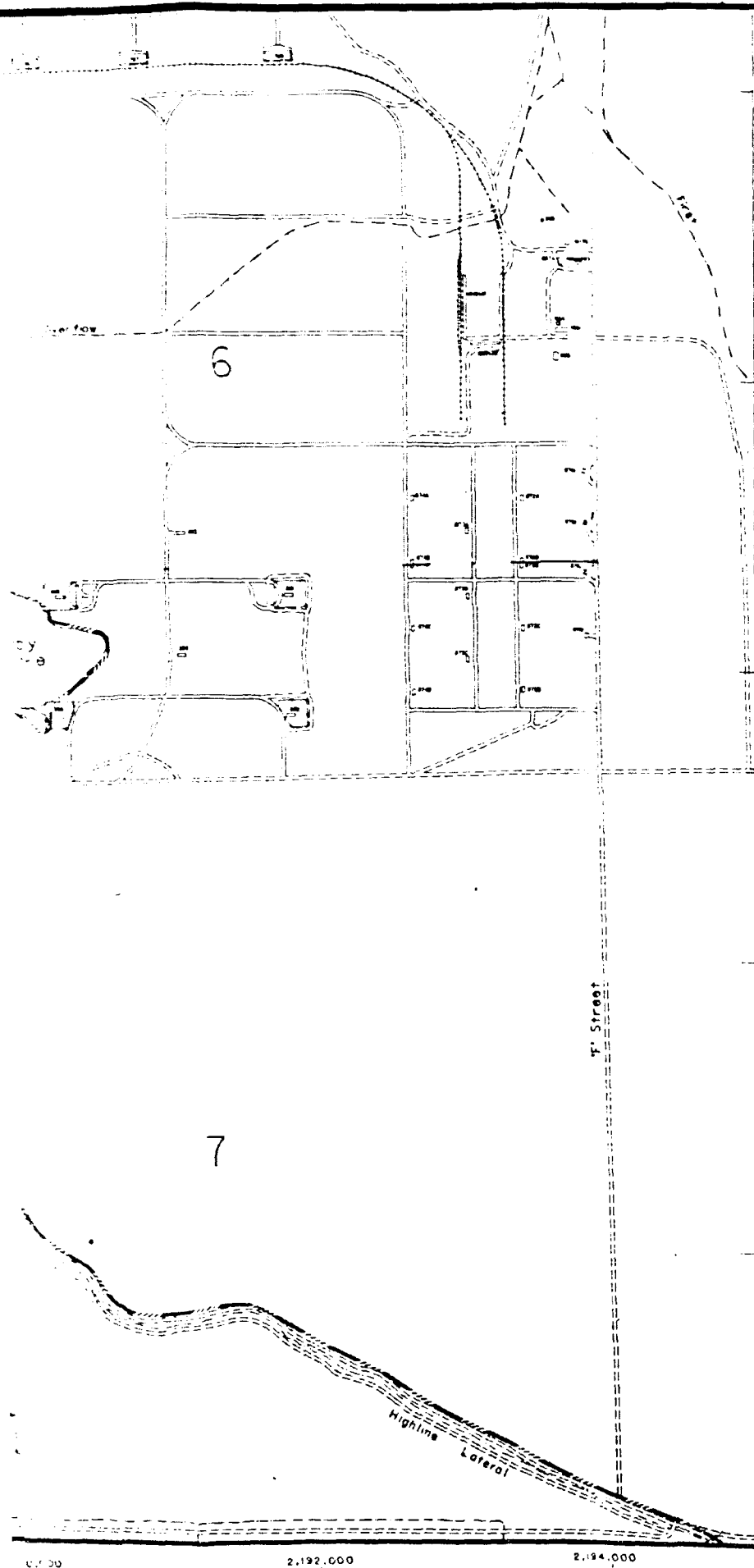


Prepared for:
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Rocky Mountain Arsenal Cleanup









FIGURE: SSA 2.1-26
ICP Metals in Soils
in the 2-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





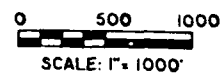
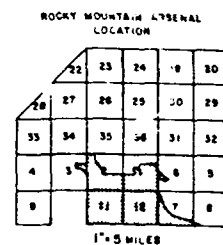


LEGEND

- | | |
|--|---------------------|
|  | Improved Road |
|  | Unimproved Road |
|  | Railroad Tracks |
|  | Existing Structure |
|  | Former Structure |
|  | Fence |
| 6 | Section Number |
|  | Stream or Ditch |
|  | Study Area Boundary |
| 174,000 | State Plane Grid |

ANALYTE SAMPLE LOCATION
AND CONCENTRATION (ug/g)

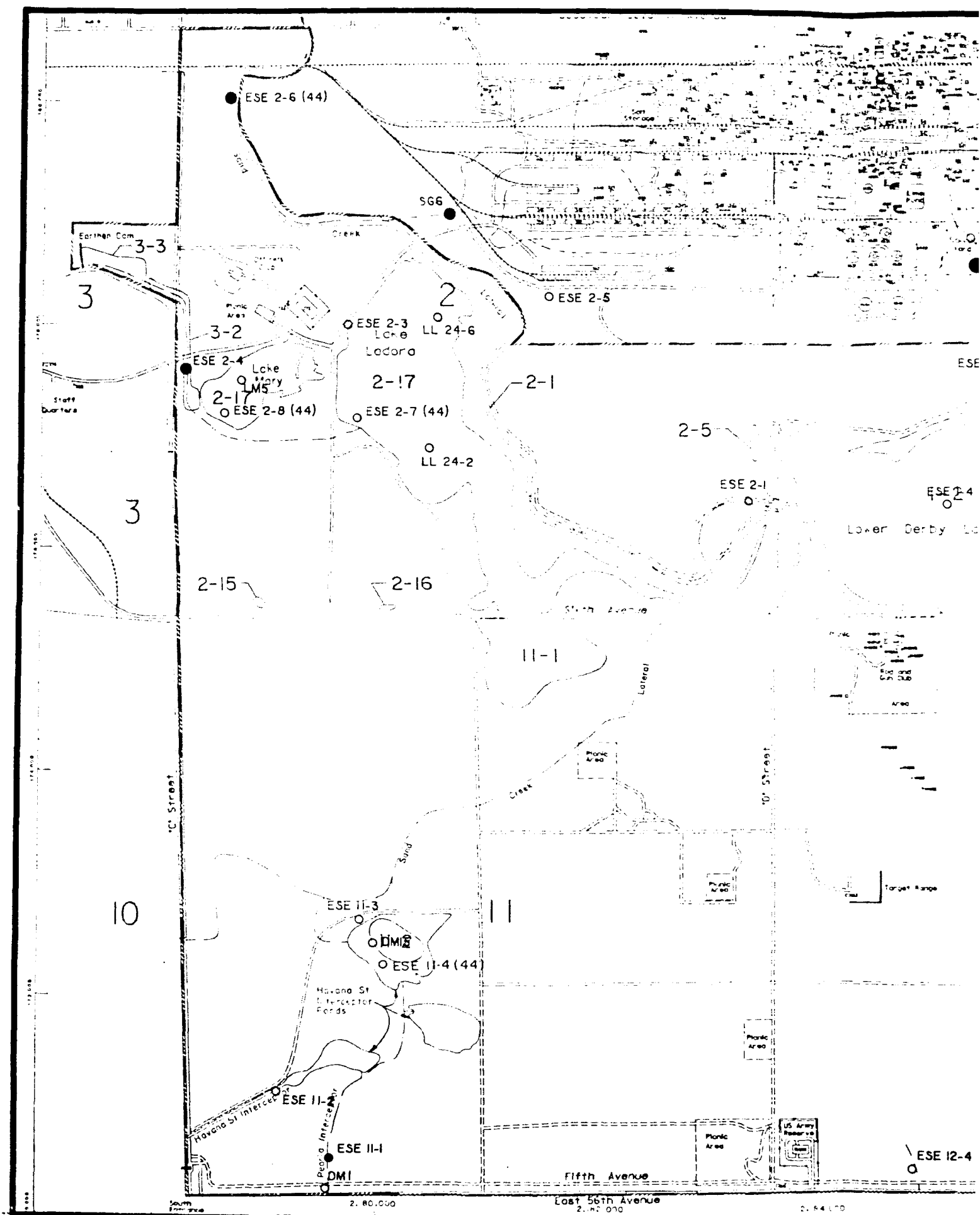
	<u>Cd</u>	<u>Cr</u>	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>
○	BCRL-2.0	BCRL-4.0	BCRL-3.5	BCRL-4.0	BCRL-8.0
●	>2.0-10	>40-100	>35-100	>40-100	>80-1,000
●	>10-100	>100-1,000	>100-1,000	>100-1,000	>1,000-10,000
●	>100	>1,000	>1,000	>1,000	>10,000

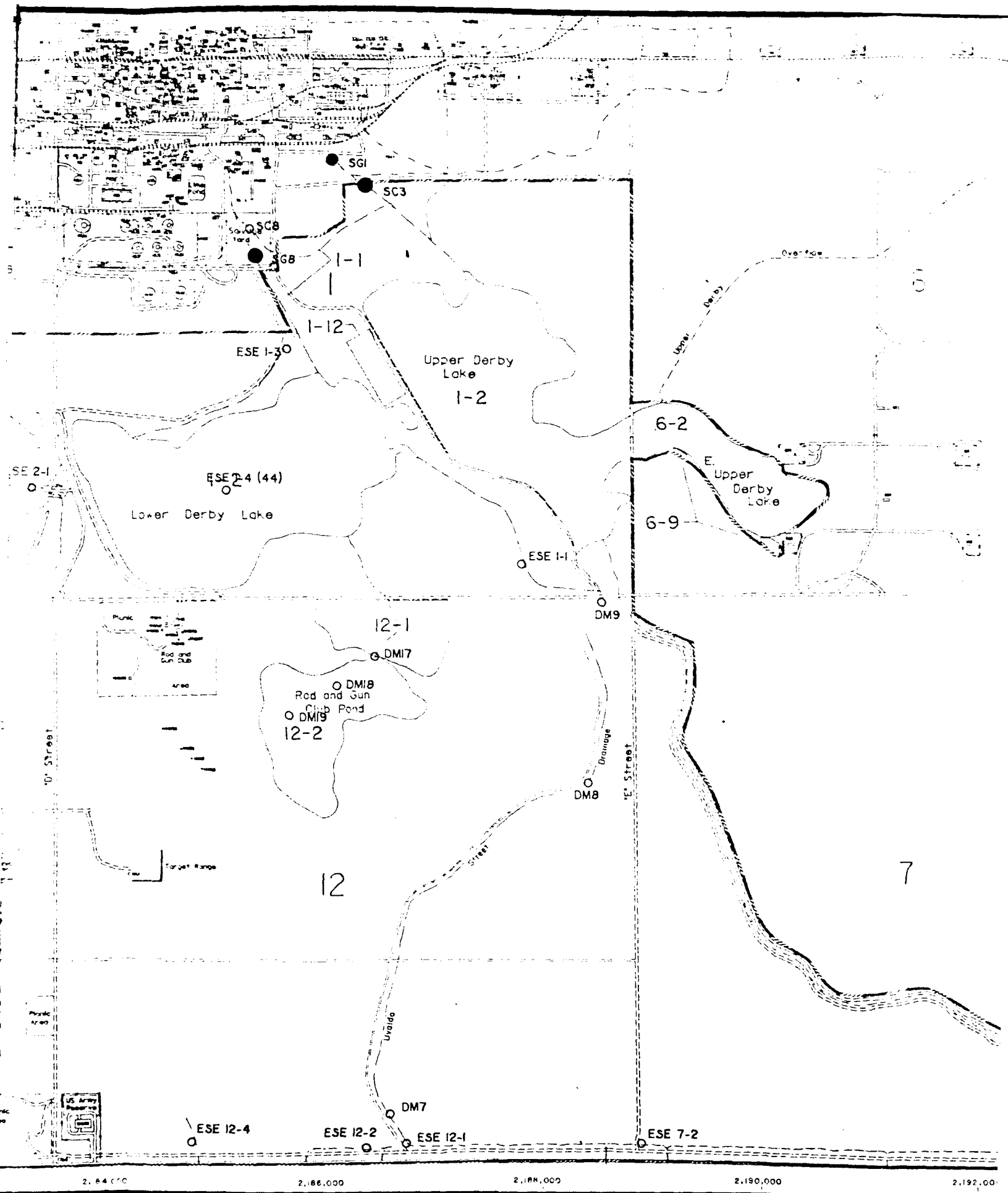


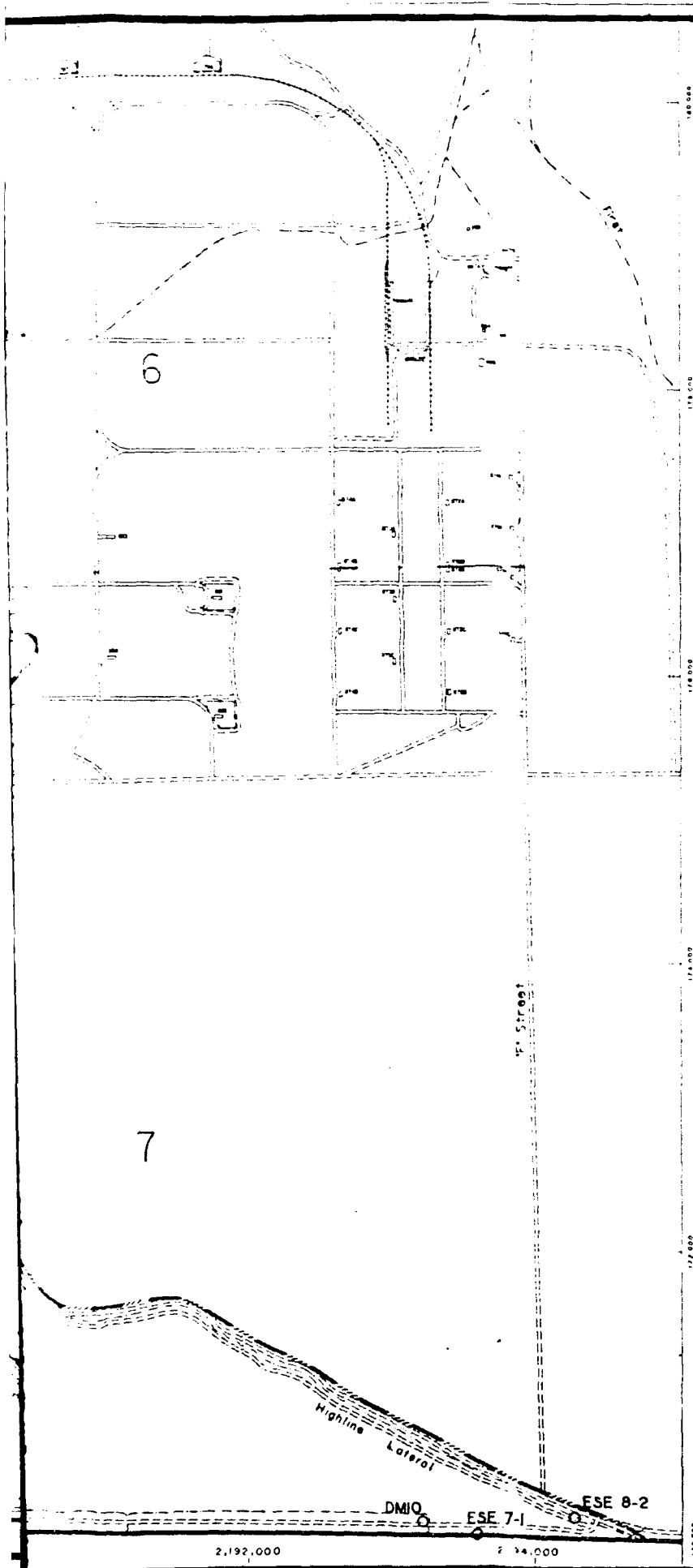
Prepared for:

**Program Manager's Office for
Rocky Mountain Arsenal Cleanup**

FIGURE: SSA 2.1-27
ICP Metals in Soils
in the 5-20 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

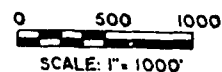
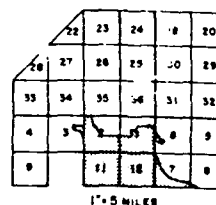
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

* Below Detection Limit (BDL), see individual reports for specific detection limits or reporting limits.

- LMI, LL24-2 ● USAEWES Report, 1984
- DM7 ● Dames & Moore, 1985
- SG6 ● Spaine & Gregg, 1983
- SCI ● Shell Oil Co., 1980
- ESE 1-3 ● ESE, Task 4 Report, 1986
- ESE 1-3(44) ● ESE, Water Remedial Investigation, 1987

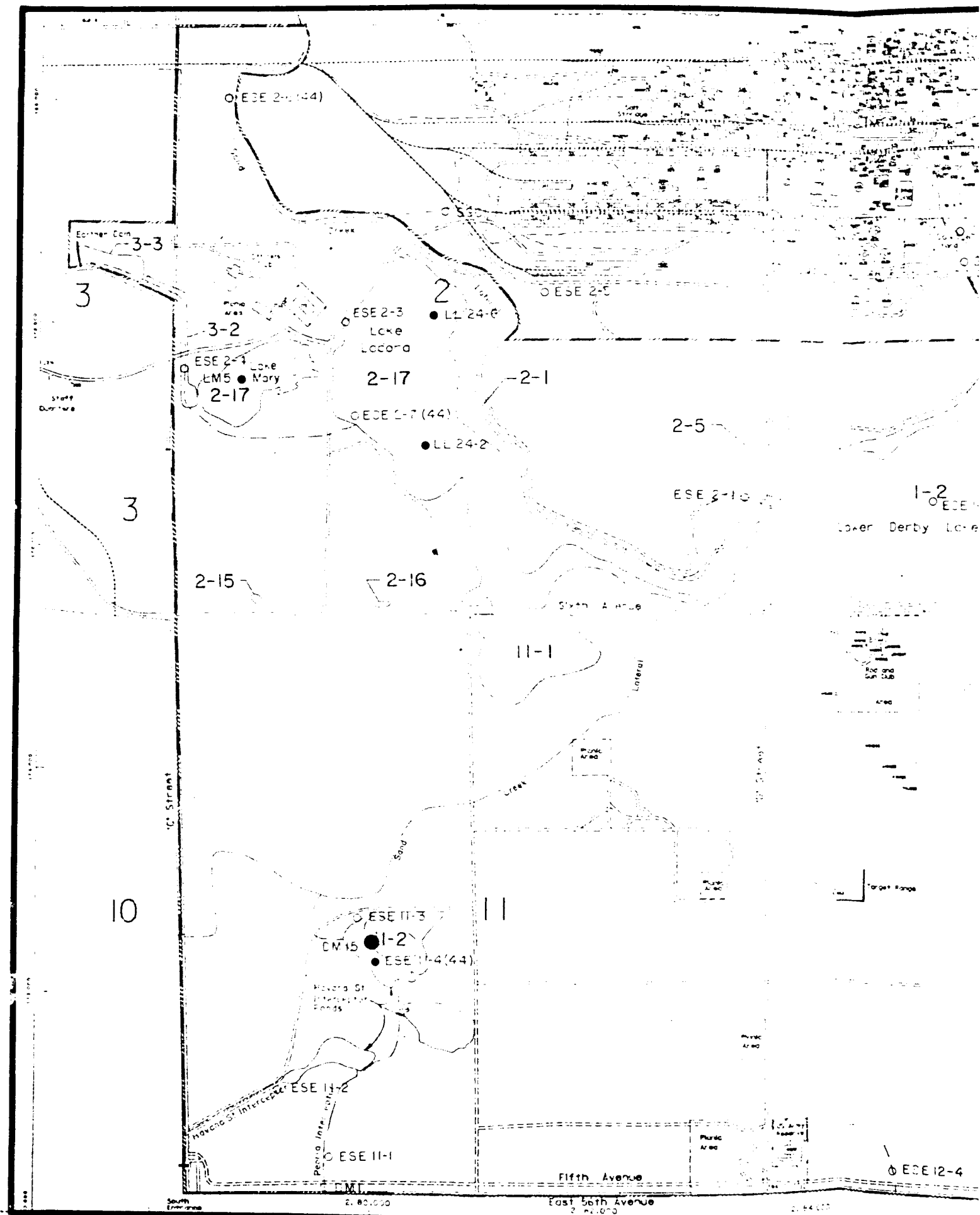
ROCKY MOUNTAIN ARSENAL LOCATION

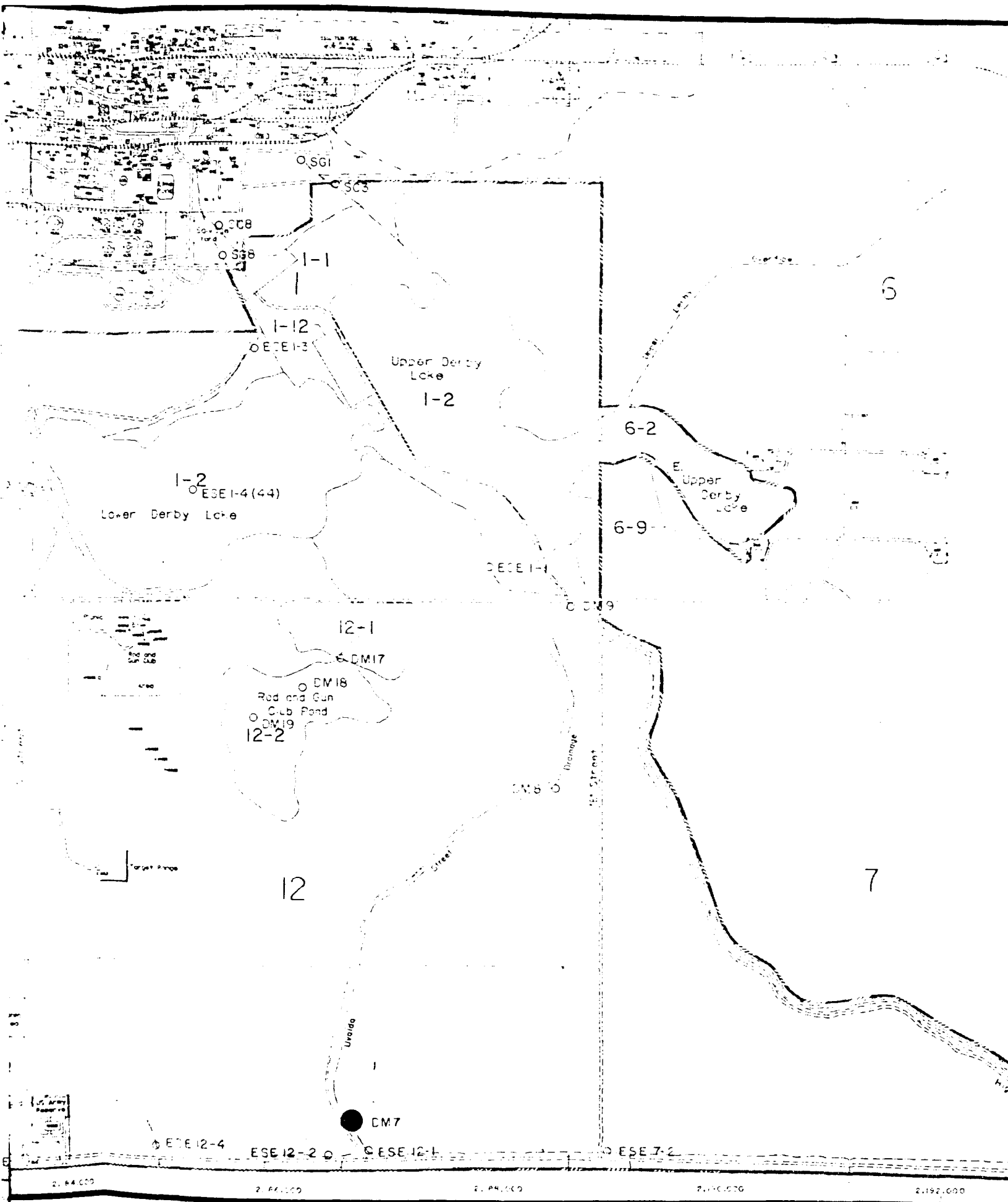


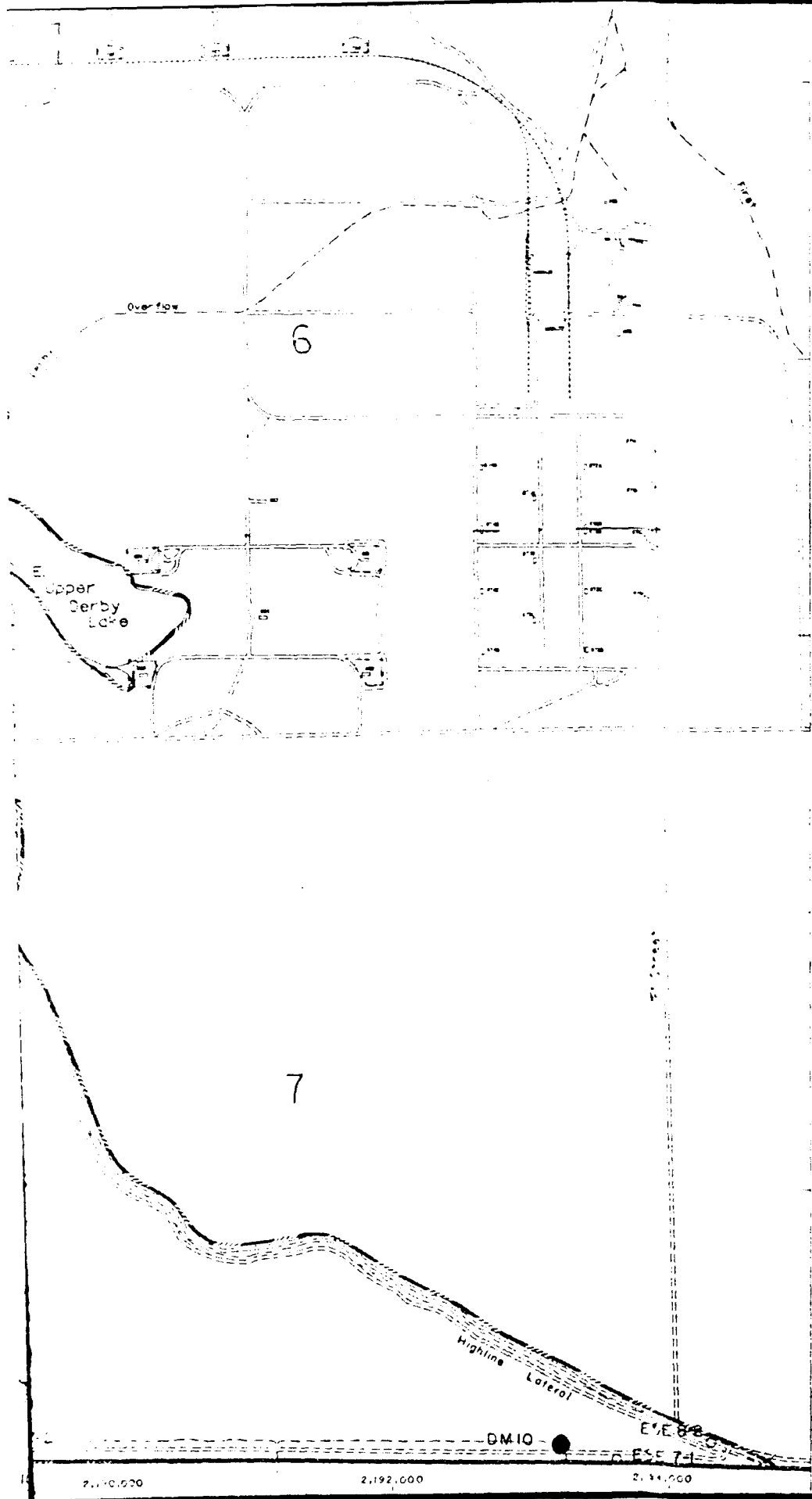
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-1
Volatile Halogenated Organics
in Surface Water
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/g)

- BDL*
- 0-1.0
- >1.0-10
- >10-100
- >100-1000

* Below Detection Limit (BDL)
see individual reports for
specific detection limits
or reporting limits.

- LMI, LL24-2 ● USAEWES Report, 1984
- DM7 ● Dames & Moore, 1985
- SG6 ● Spaine & Gregg, 1983
- SC1 ● Shell Oil Co., 1980
- ESE 1-3 ● ESE, Task 4 Report, 1986
- ESE1-3(44) ● ESE, Water Remedial Investigation, 1987

ROCKY MOUNTAIN ARSENAL LOCATION

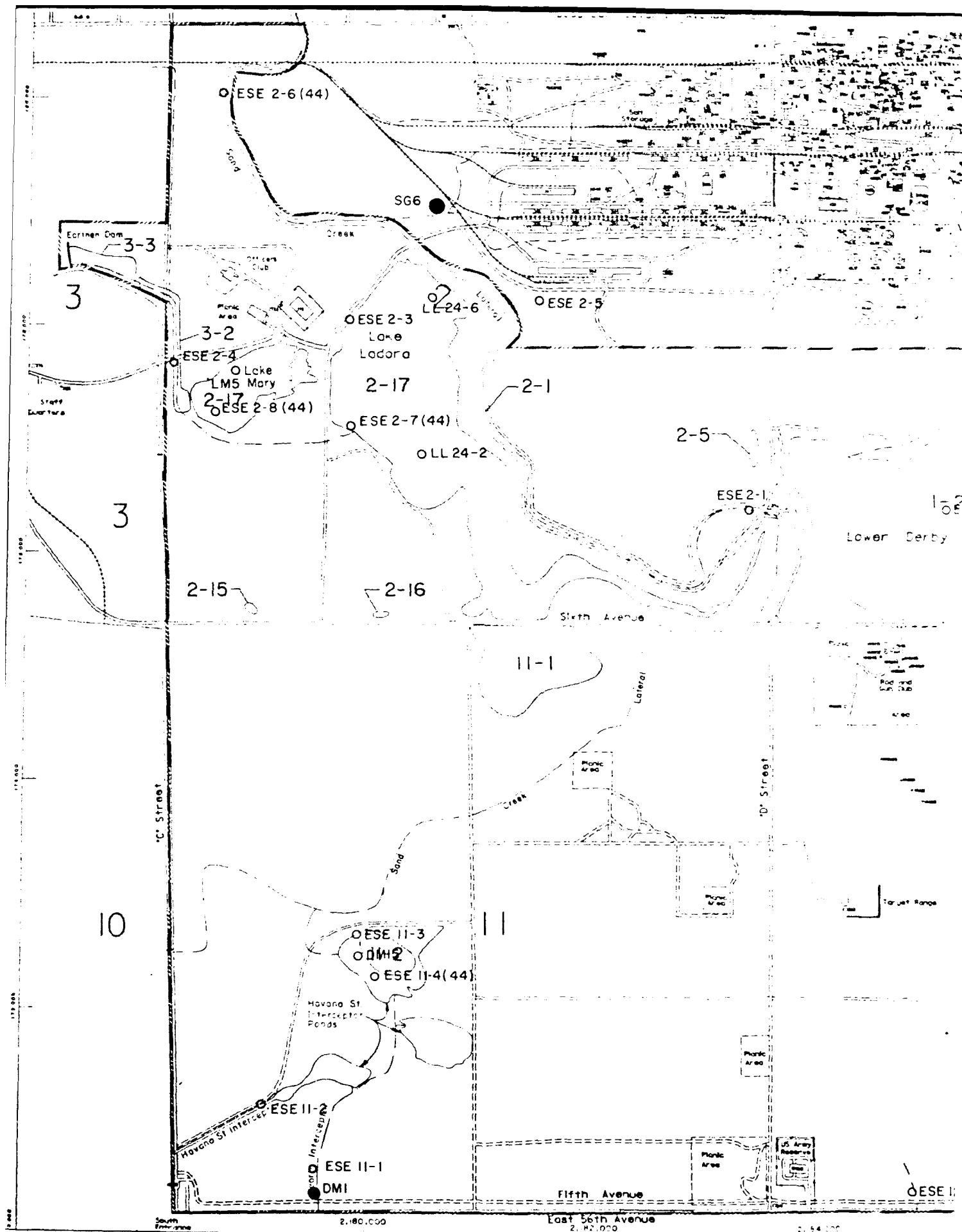


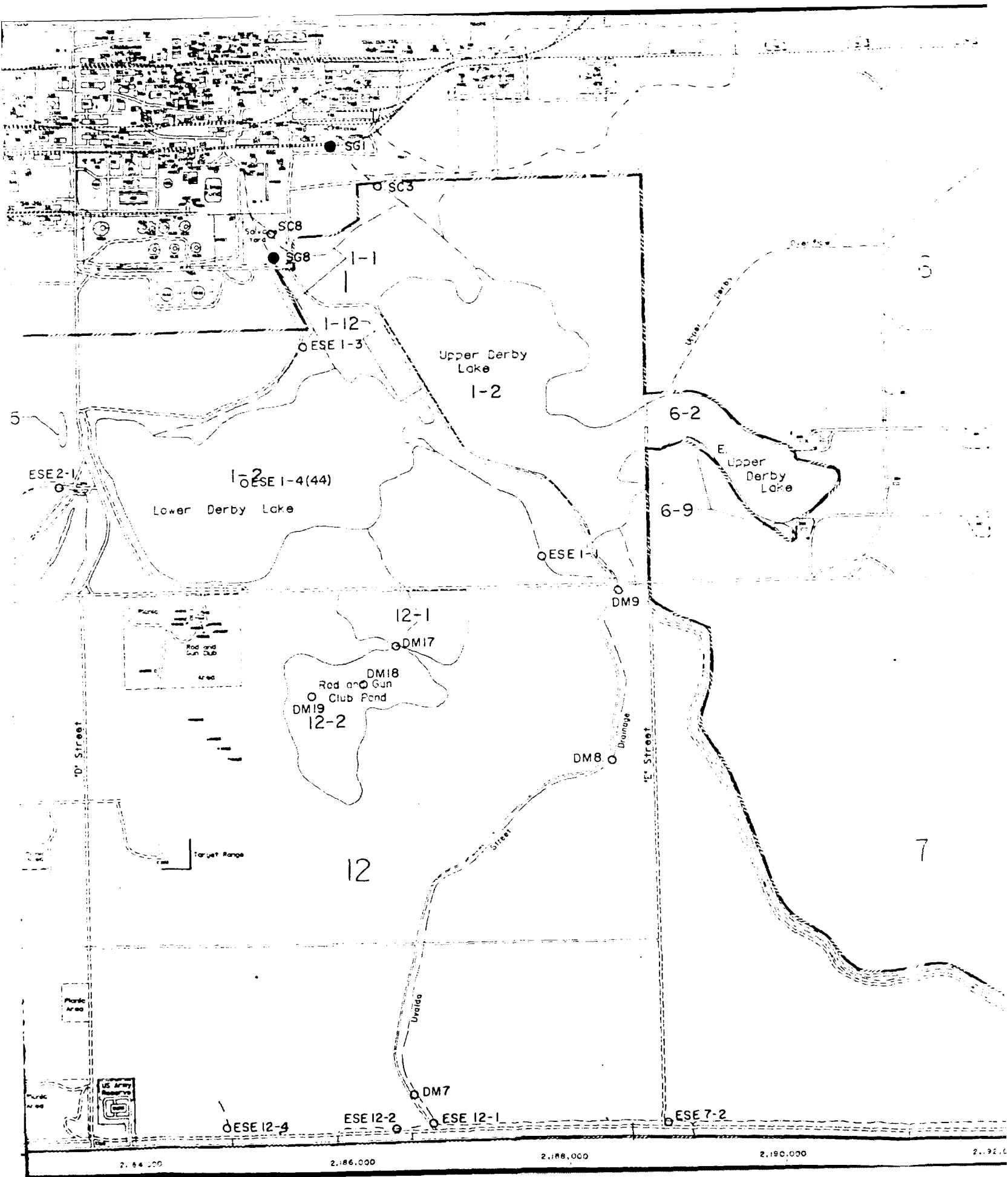
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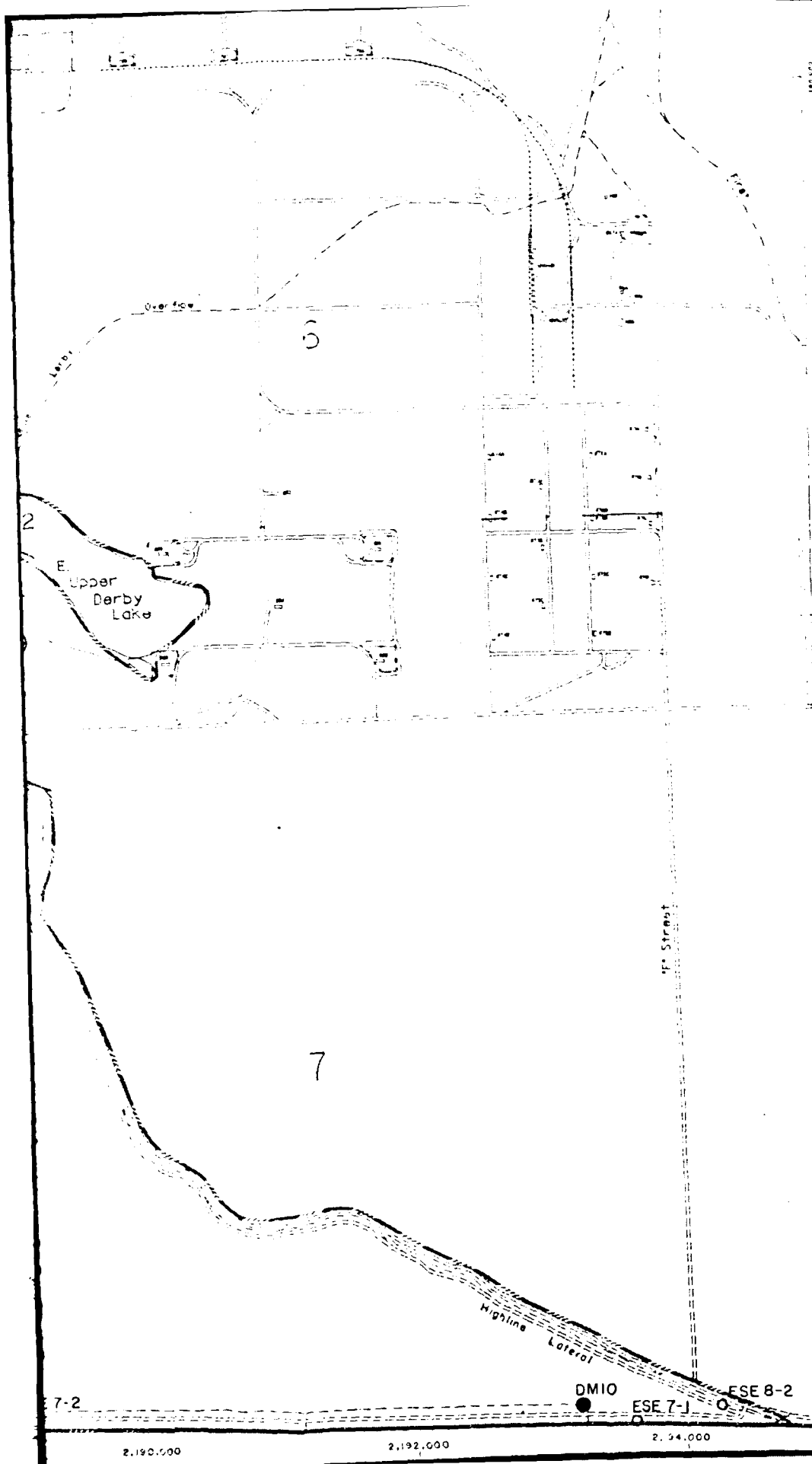
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA2.2-2
Volatile Halogenated Organics -
Methylene Chloride only
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

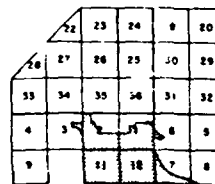
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000

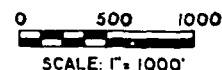
* Below Detection Limit (BDL) see individual reports for specific detection limits or reporting limits.

LMI, LL24-2 ● USAEWES Report, 1984
 DM7 ● James B Moore, 1985
 SG6 ● Spaine & Gregg, 1983
 SC1 ● Shell Oil Co., 1980
 ESE 1-3 ● ESE, Task 4 Report, 1986
 ESE1-3(44) ● ESE, Water Remedial Investigation, 1987

ROCKY MOUNTAIN ARSENAL LOCATION



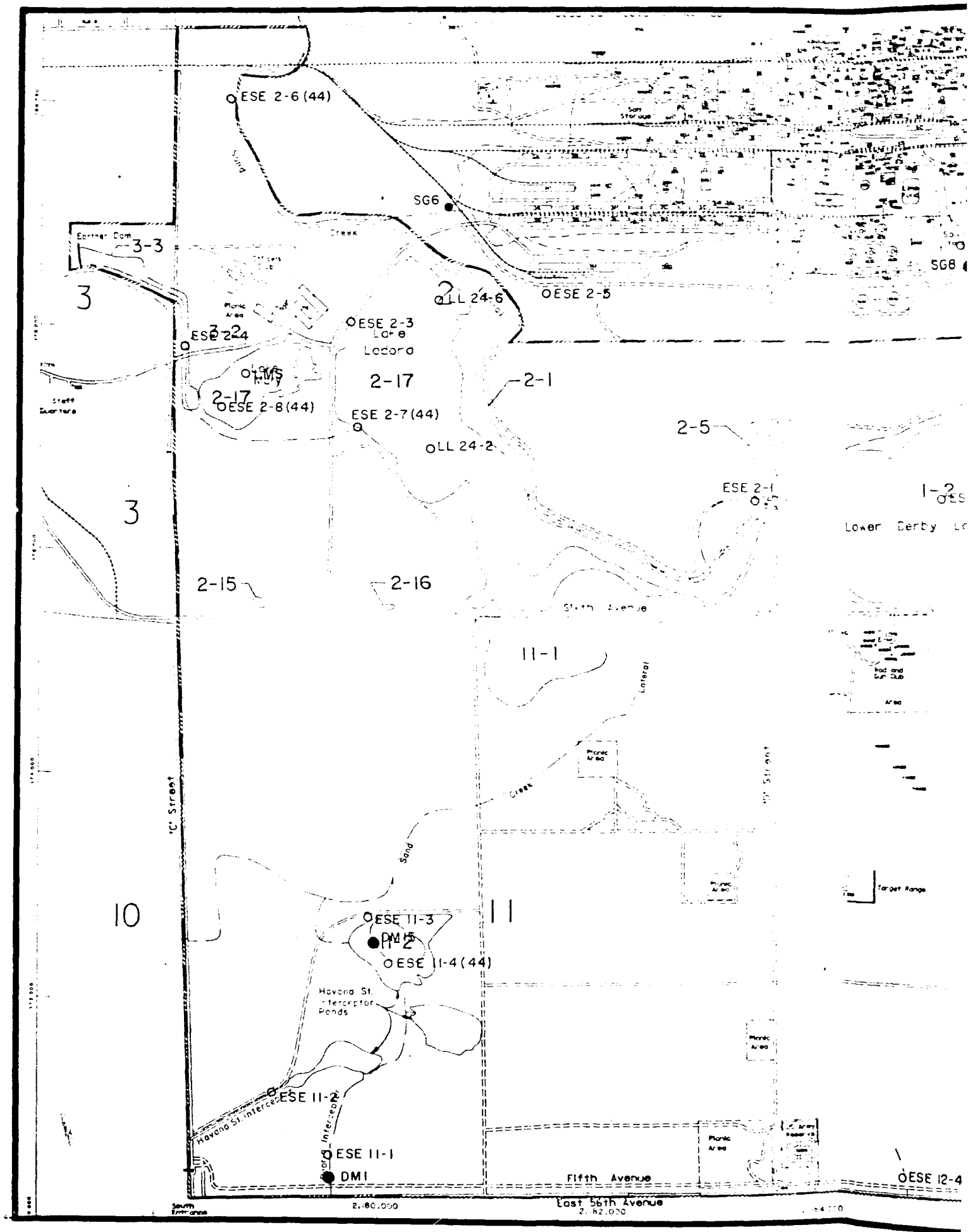
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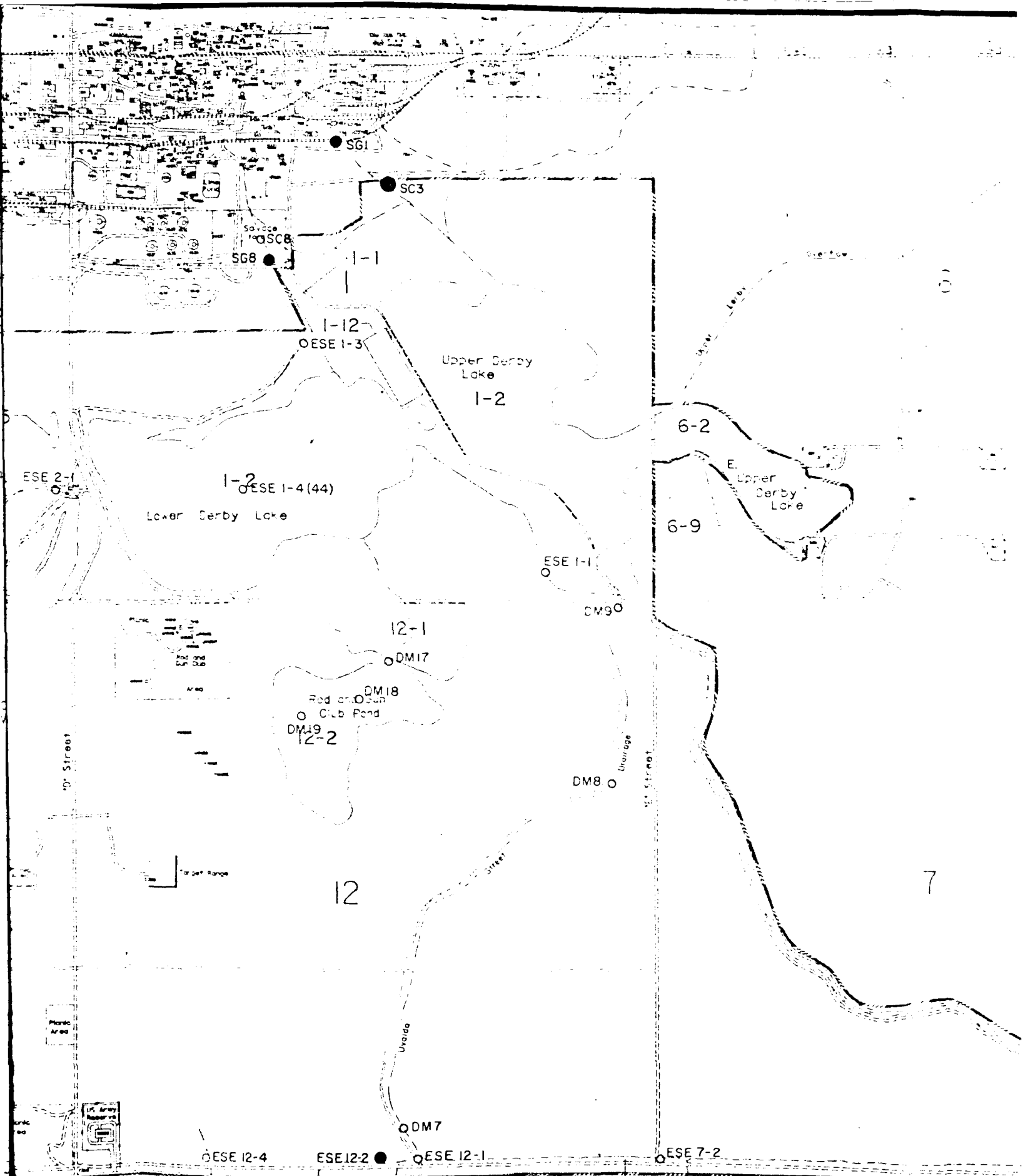


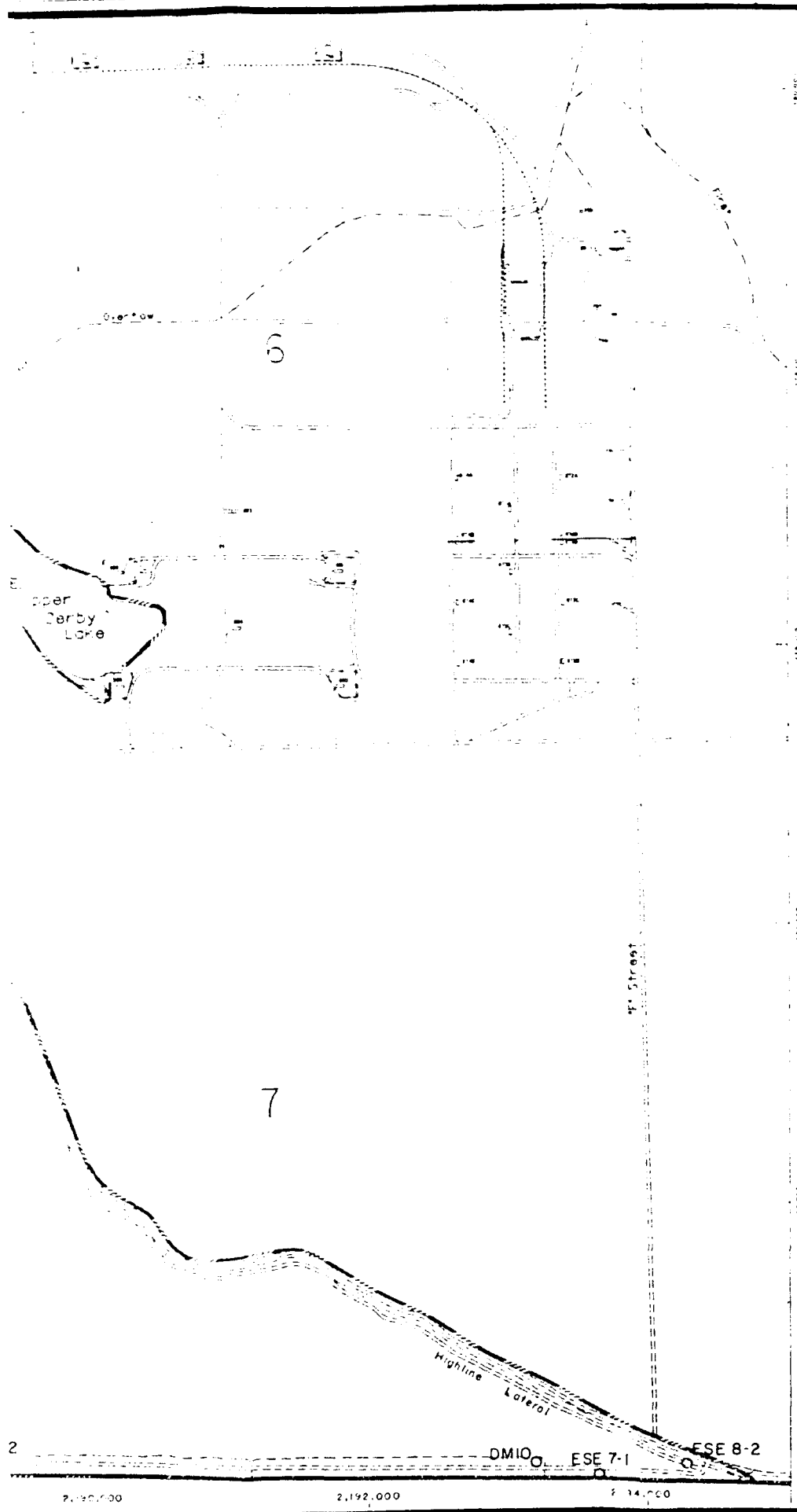
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FIGURE: SSA 2.2-3
 Volatile Hydrocarbons
 in Surface Water
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

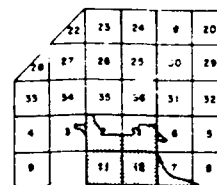
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

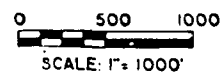
* Below Detection Limit (BDL) see individual reports for specific detection limits or reporting limits.

LMI, LL24-2 ● USAEWES Report, 1984
 DM7 ● James B Moore, 1985
 SG6 ● Spaine & Gregg, 1983
 SCI ● Shell Oil Co., 1980
 ESE 1-3 ● ESE, Task 4 Report, 1986
 ESE 1-3(44) ● ESE, Water Remedial Investigation, 1987

ROCKY MOUNTAIN ARSENAL LOCATION



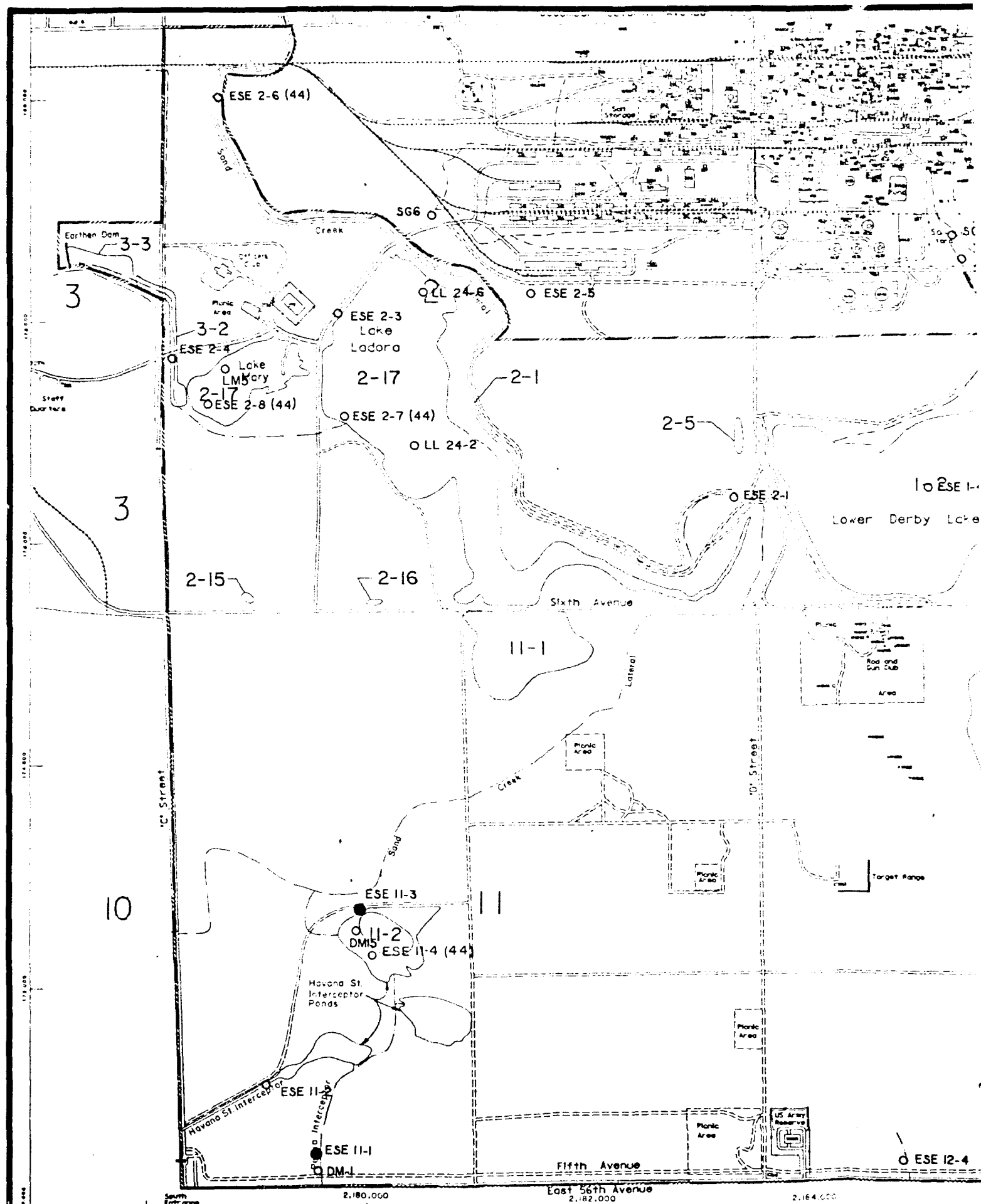
1" = 5 MILES

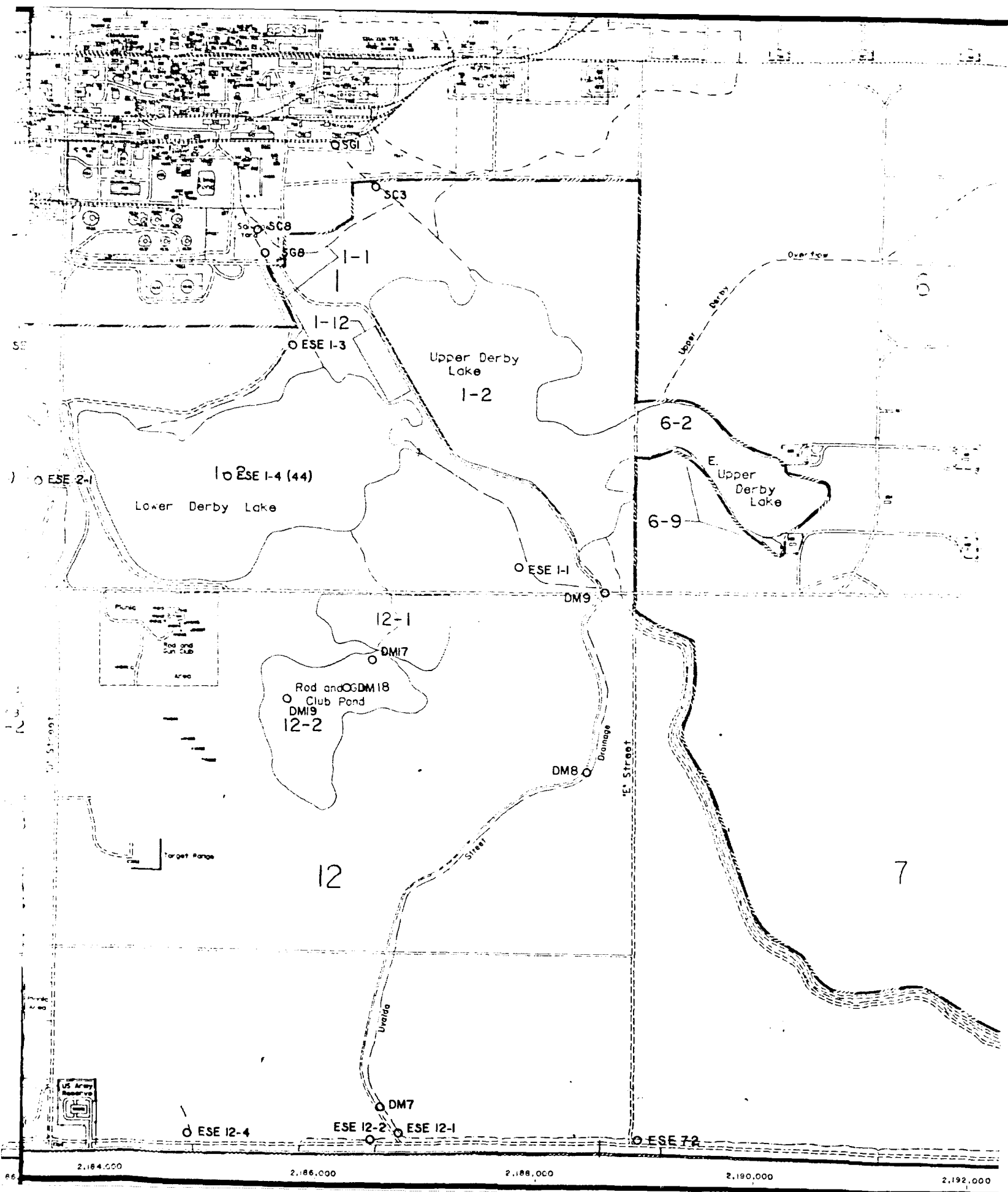


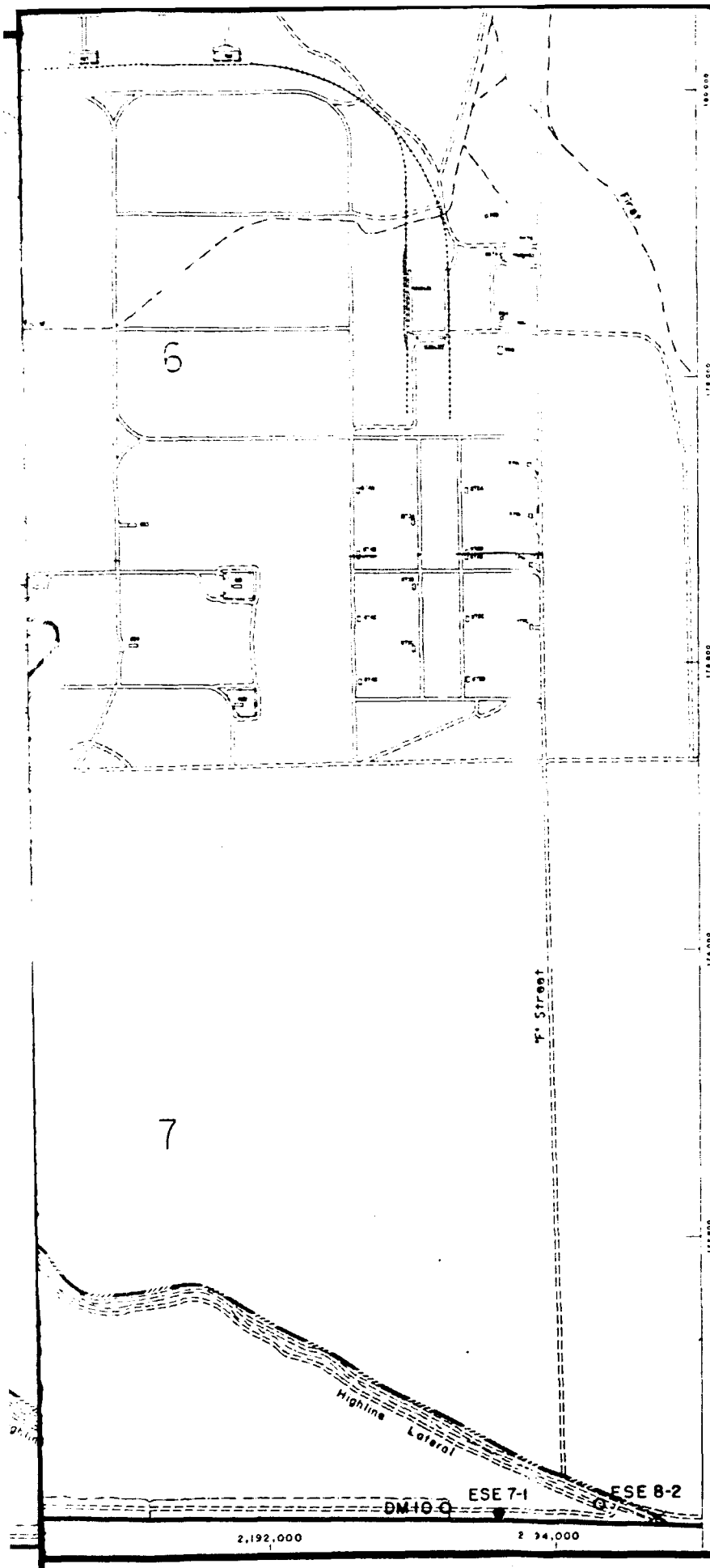
Prepared for:

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 Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-4
 Volatile Aromatic Organics
 in Surface Water
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- +—+— Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

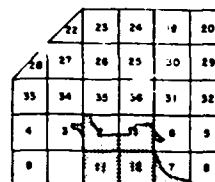
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

* Below Detection Limit (BDL)
see individual reports for
specific detection limits
or reporting limits.

LMI, LL24-2 ● USAEWES Report, 1984
DM7 ● Dames & Moore, 1985
SG6 ● Spaine & Gregg, 1983
SCI ● Shell Oil Co., 1980
ESE 1-3 ● ESE, Task 4 Report, 1986
ESEI-3(44) ● ESE, Water Remedial
Investigation, 1987

ROCKY MOUNTAIN ARSENAL
LOCATION



1" = 5 MILES

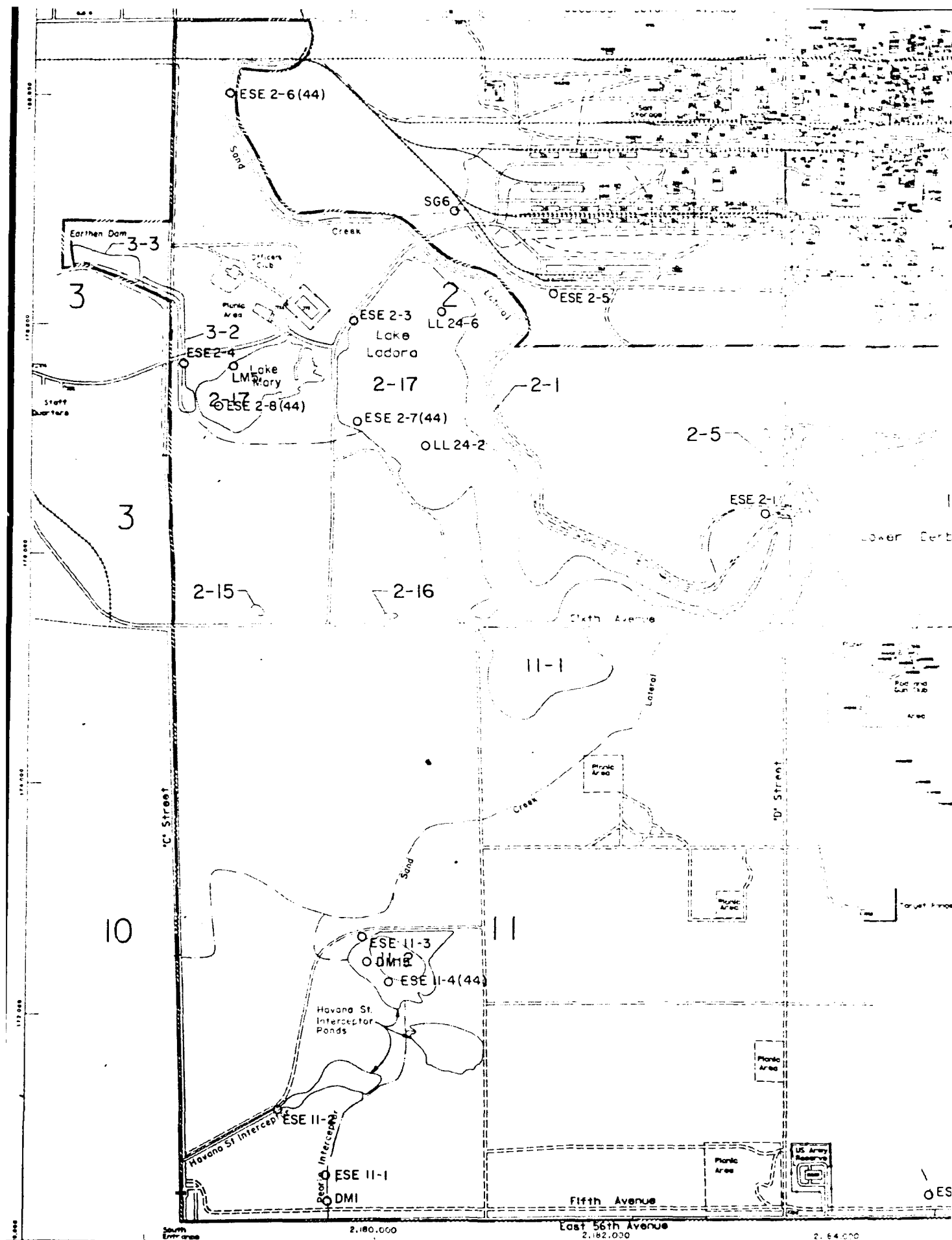


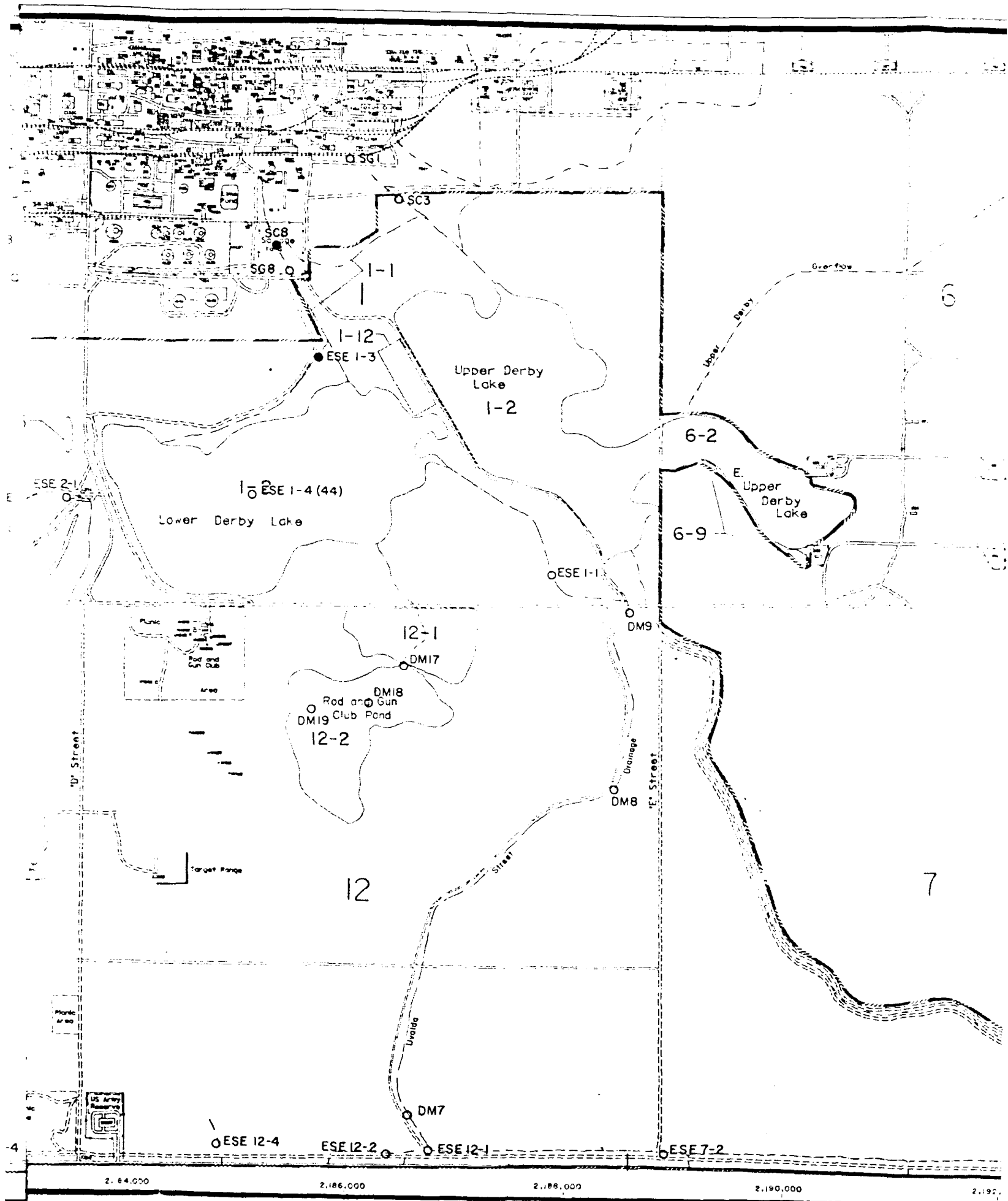
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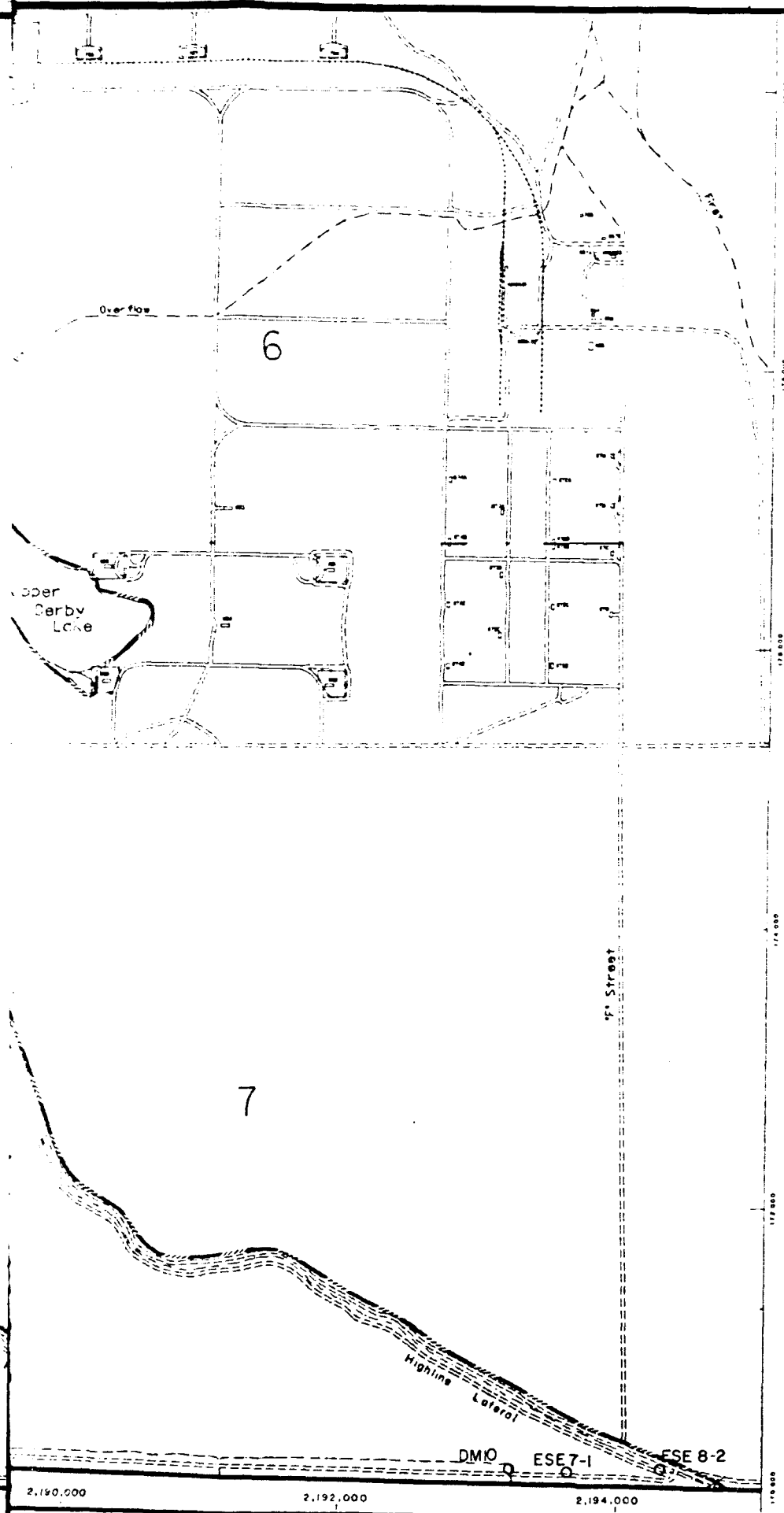
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-5
Organosulfur Compounds
in Surface Water
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - Former Structure
- - - Fence
- 6 Section Number
- - - Stream or Ditch
- - - Study Area Boundary

174,000 State Plane Grid

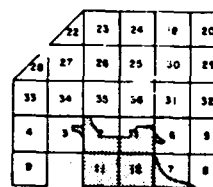
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

* Below Detection Limit (BDL) see individual reports for specific detection limits or reporting limits.

- LMI, LL24-2 ● USAEWES Report, 1984
- DM7 ● Dames & Moore, 1985
- SG6 ● Spaine & Gregg, 1983
- SCI ● Shell Oil Co., 1980
- ESE 1-3 ● ESE, Task 4 Report, 1986
- ESE 1-3(44) ● ESE, Water Remedial Investigation, 1987

ROCKY MOUNTAIN ARSENAL LOCATION



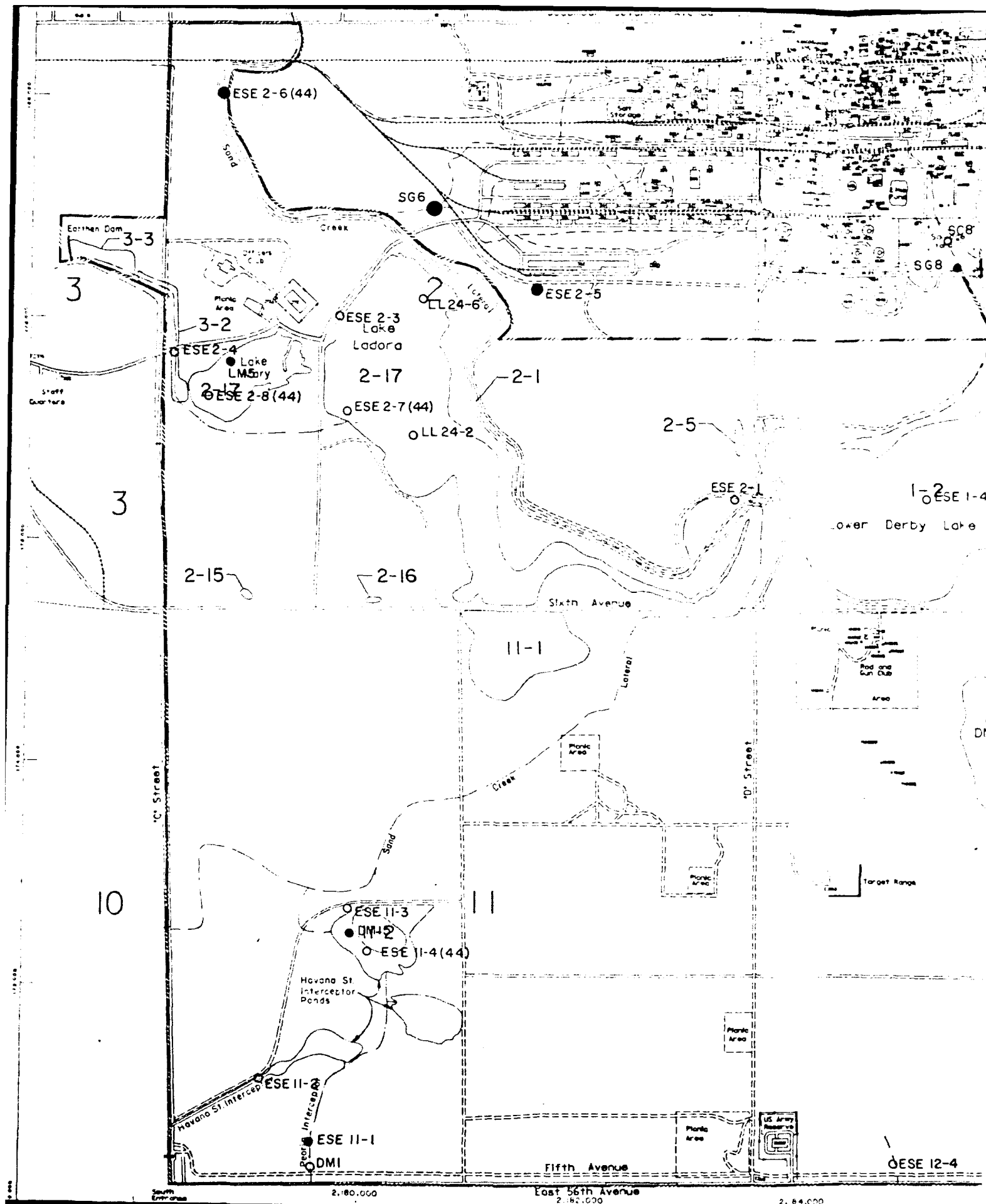
1" = 5 MILES

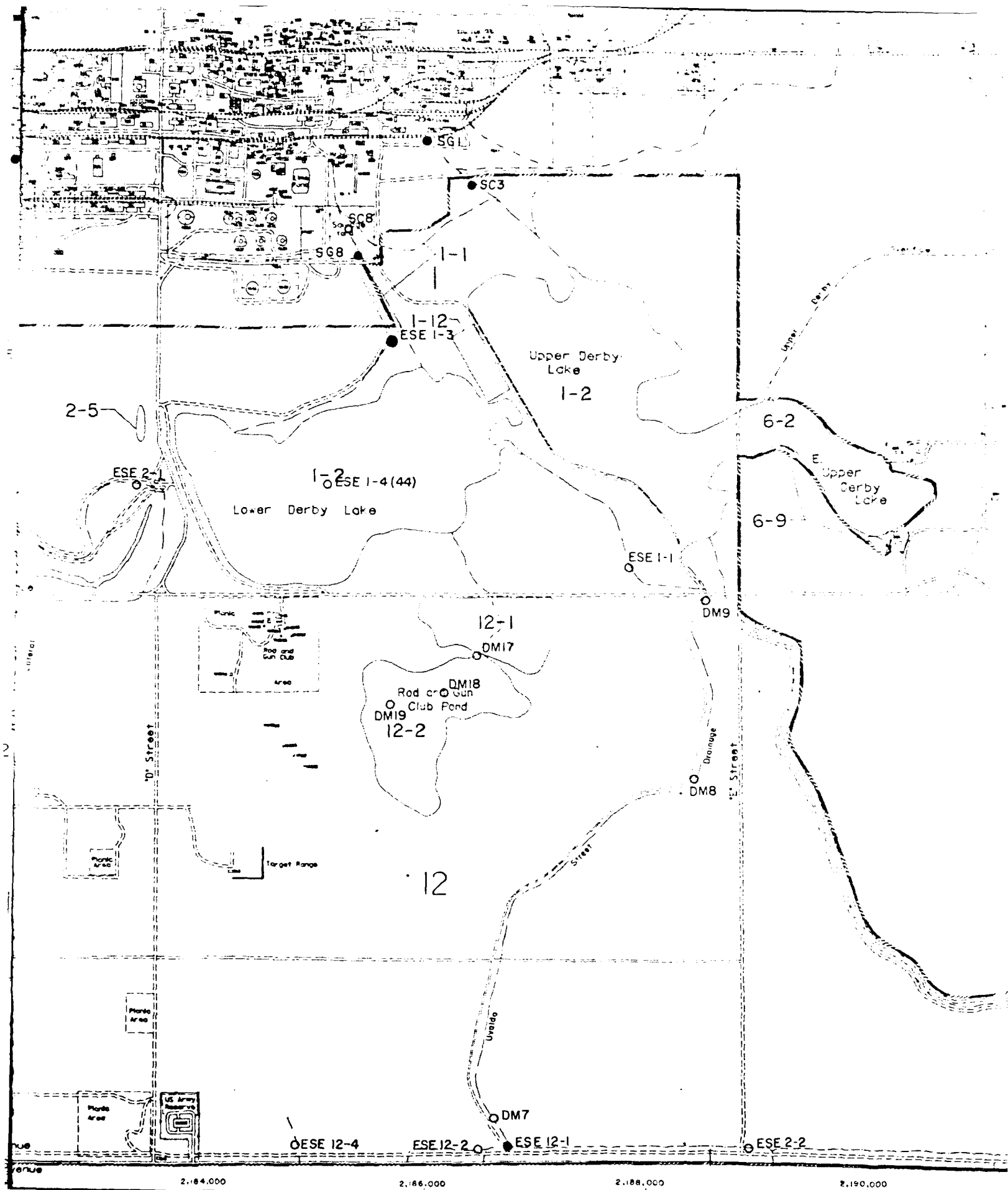
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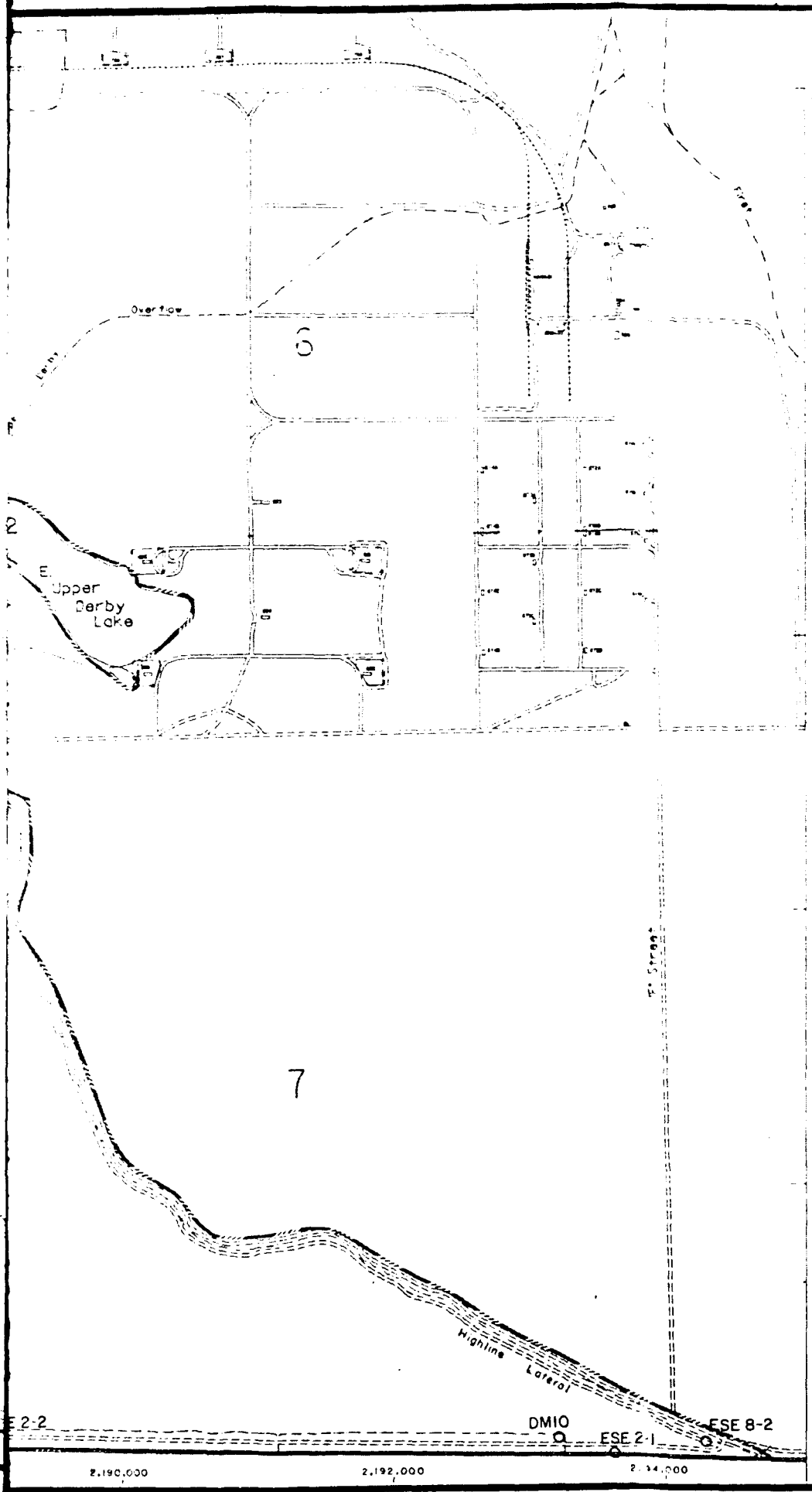
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-6
Dibromochloropropane
in Surface Water
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - - - Former Structure
- Fence
- 6** Section Number
- / - Stream or Ditch
- ▤ Study Area Boundary

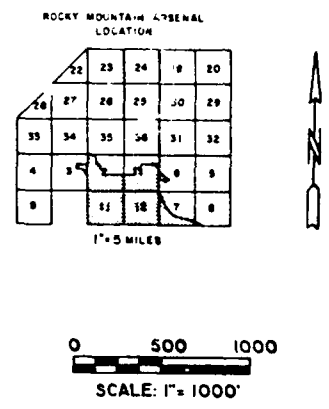
174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

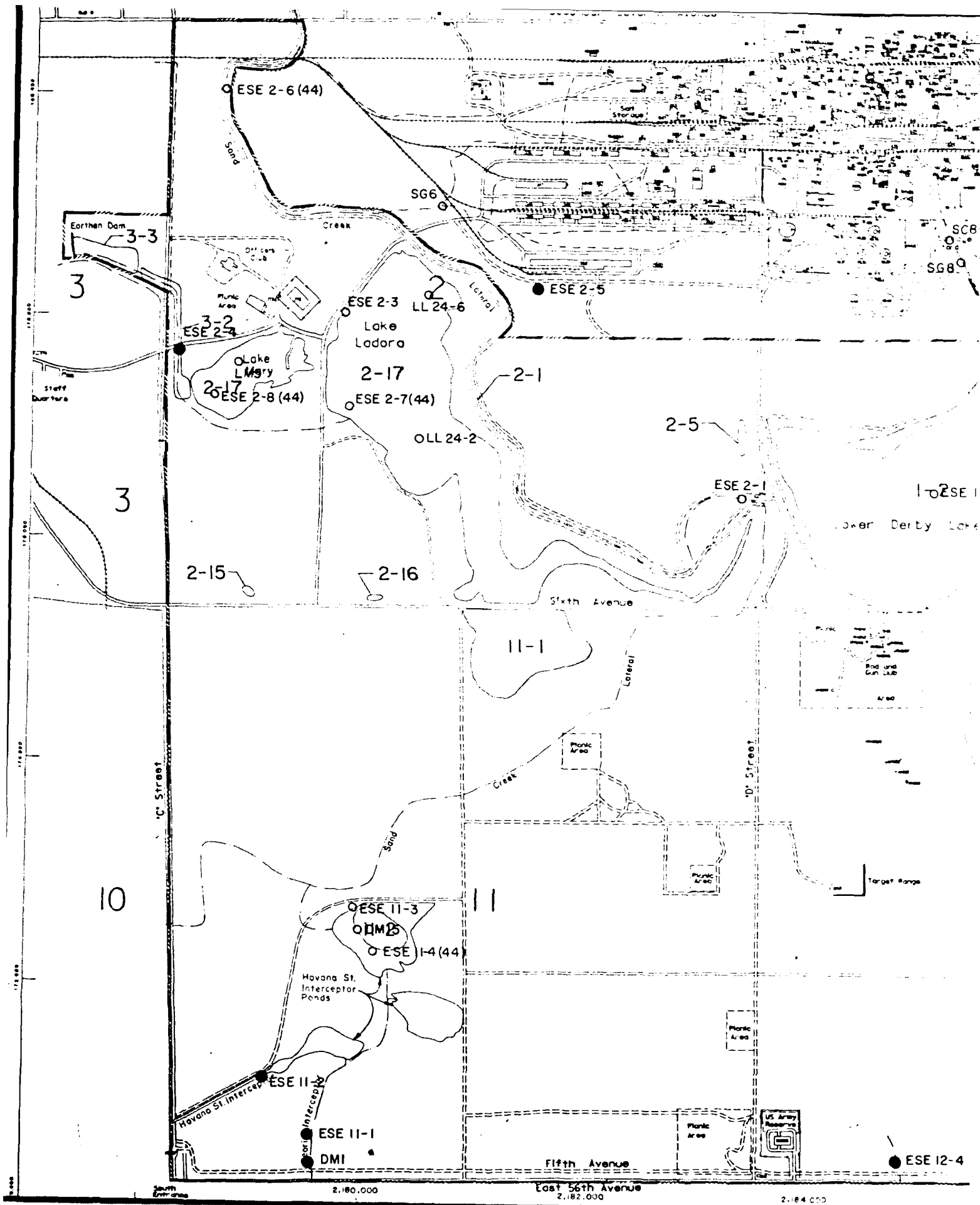
* Below Detection Limit (BDL) see individual reports for specific detection limits or reporting limits.

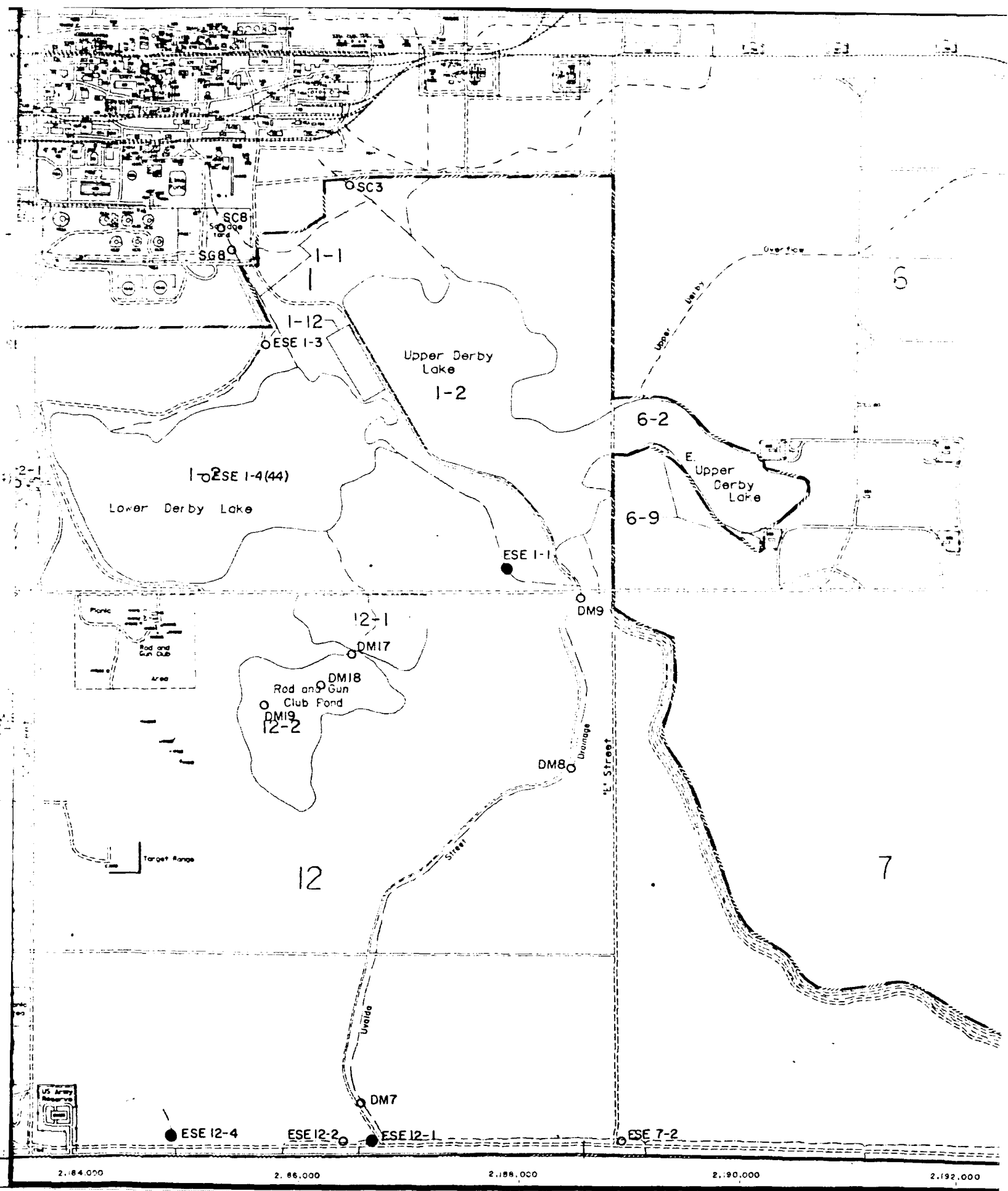
LMI, LL24-2 ● USAEWES Report, 1984
 DM7 ● Dames & Moore, 1985
 SG6 ● Spaine & Gregg, 1983
 SC1 ● Shell Oil Co., 1980
 ESE 1-3 ● ESE, Task 4 Report, 1986
 ESE 1-3(44) ● ESE, Water Remedial Investigation, 1987

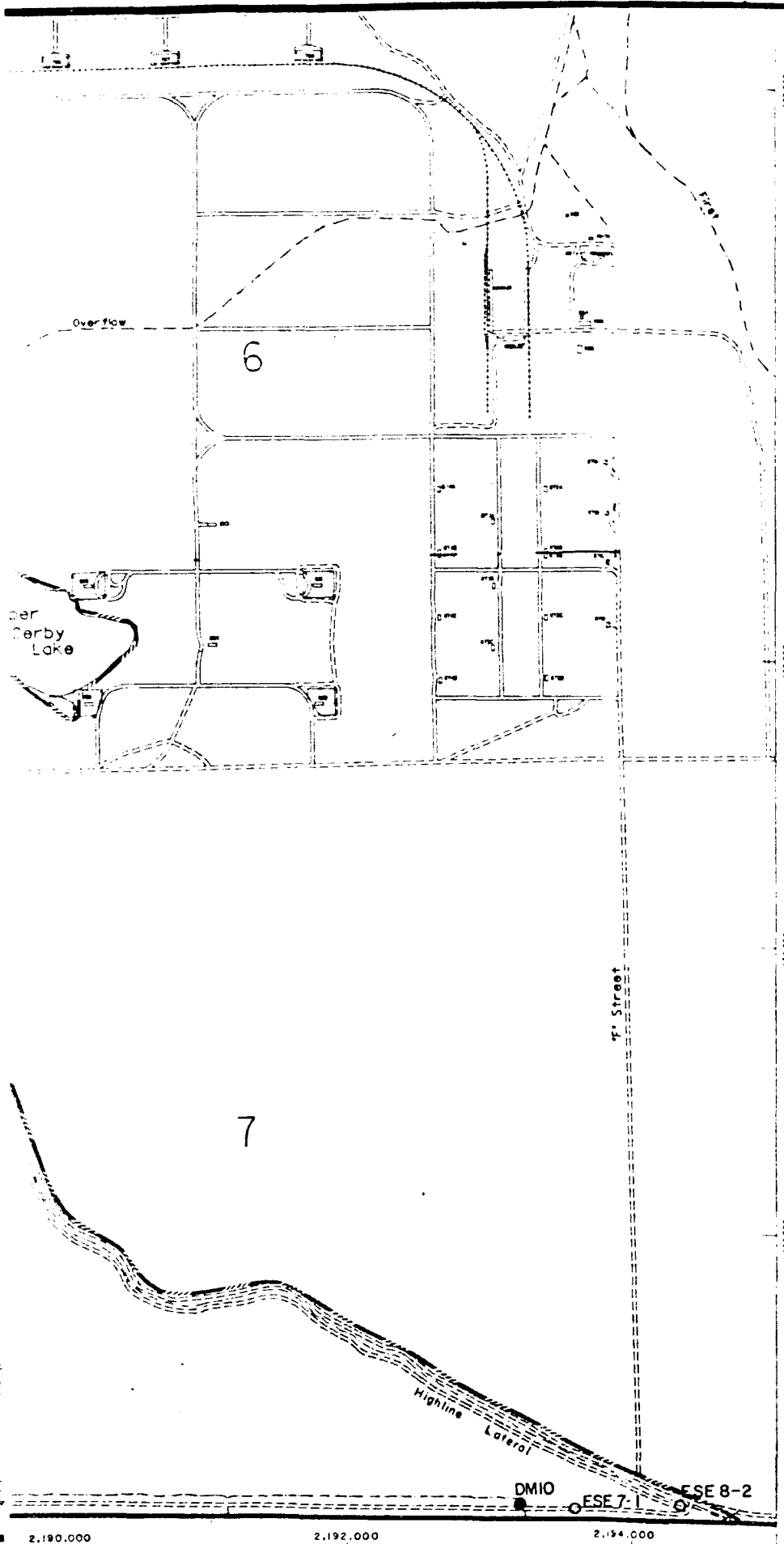


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 Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-7
 Organochlorine Pesticides
 in Surface Water
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated







LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

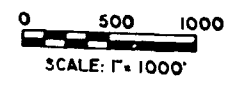
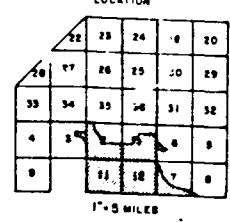
Analyte Sample Location and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

* Below Detection Limit (BDL) see individual reports for specific detection limits or reporting limits.

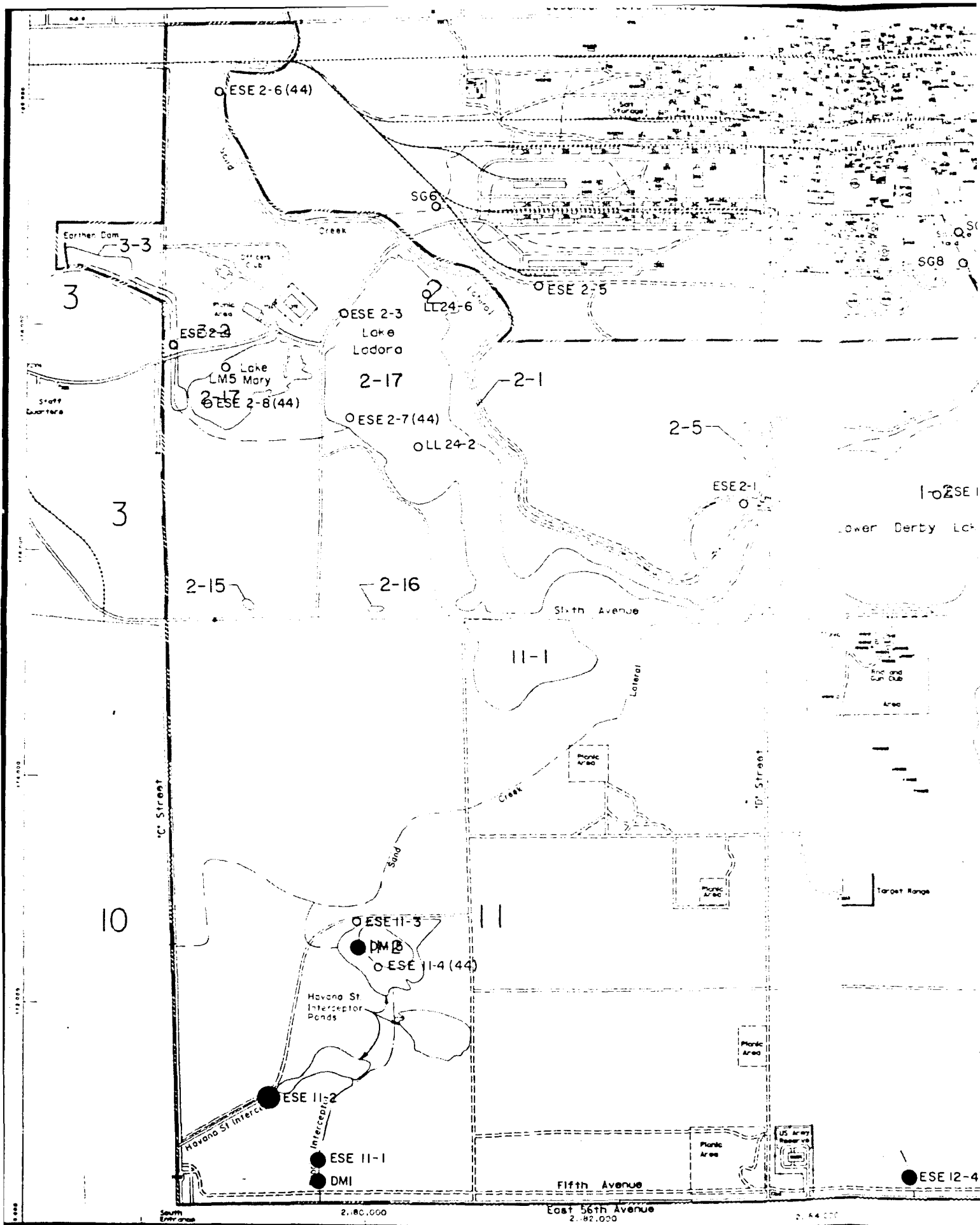
- LMI,LL24-2 • USAEWES Report,1984
- DM7 • Dames & Moore,1985
- SG6 • Spaine & Gregg,1983
- SCI • Shell Oil Co,1980
- ESE 1-3 • ESE,Task 4 Report,1986
- ESE1-3(44) • ESE,Water Remedial Investigation,1987

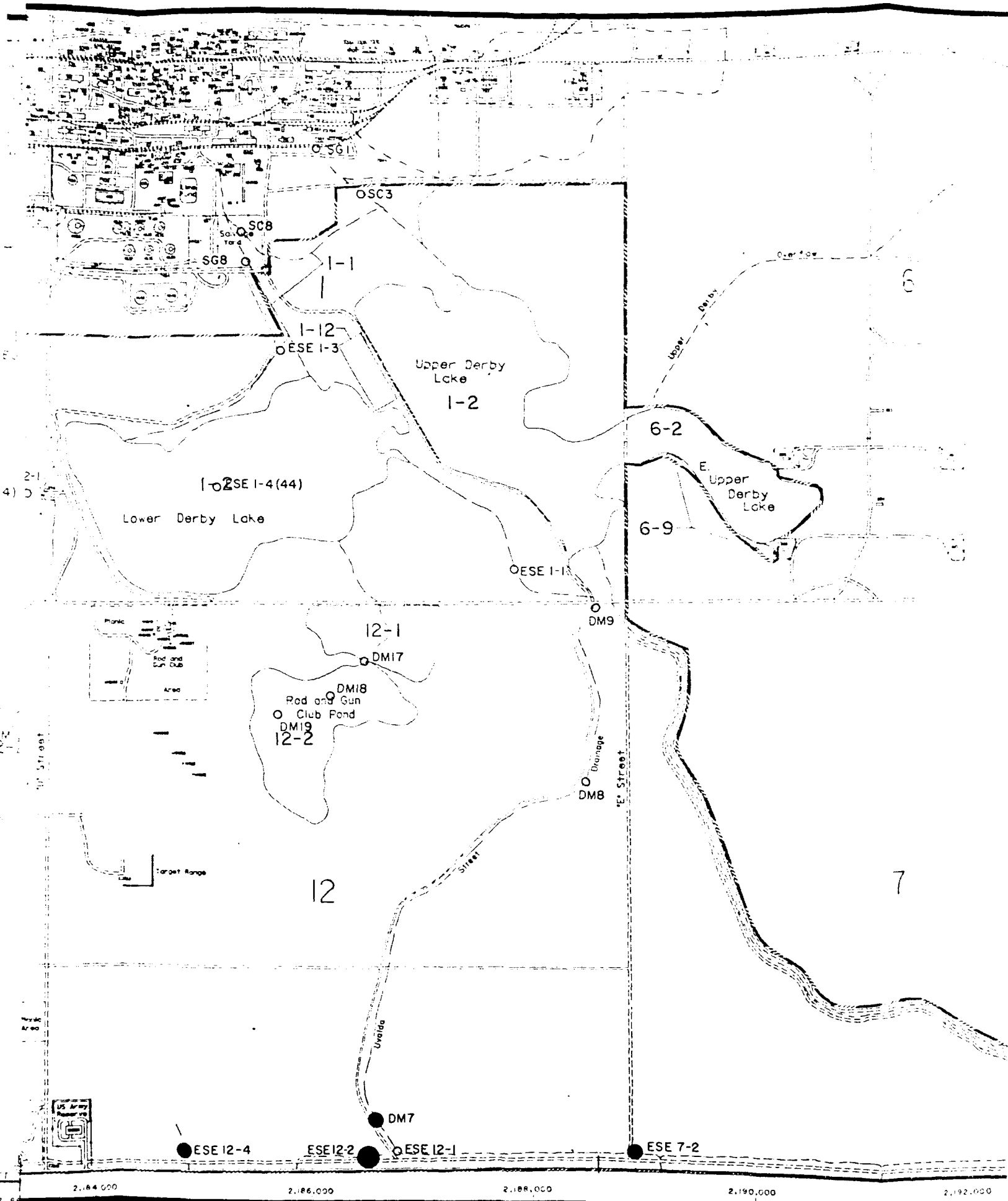
ROCKY MOUNTAIN ARSENAL LOCATION

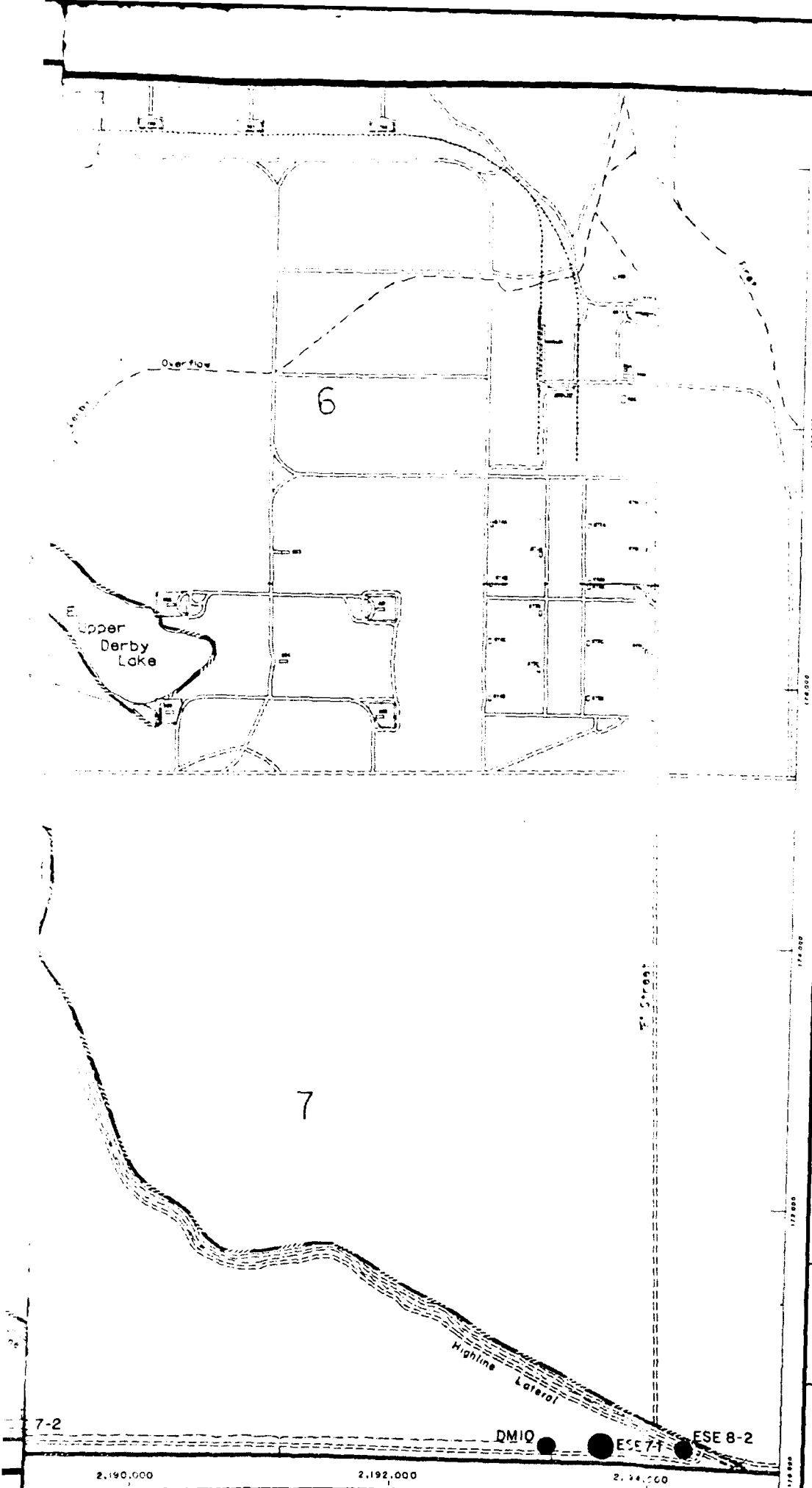


Prepared for:
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Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-8
Arsenic
in Surface Water
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

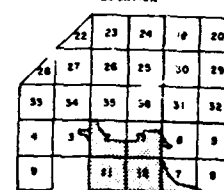
Analyte Sample Location
and Concentration (ug/l)

- BDL*
- 0-1.0
- >1.0 - 10
- >10 - 100
- >100 - 1,000

* Below Detection Limit (BDL)
see individual reports for
specific detection limits
or reporting limits.

- LM1,LL24-2 ● USAEWES Report, 1984
- DM7 ● Dames & Moore, 1985
- SG6 ● Spaine & Gregg, 1983
- SCI ● Shell Oil Co., 1980
- ESE 1-3 ● ESE, Task 4 Report, 1986
- ESE 1-3(44) ● ESE, Water Remedial
Investigation, 1987

ROCKY MOUNTAIN ARSENAL
LOCATION



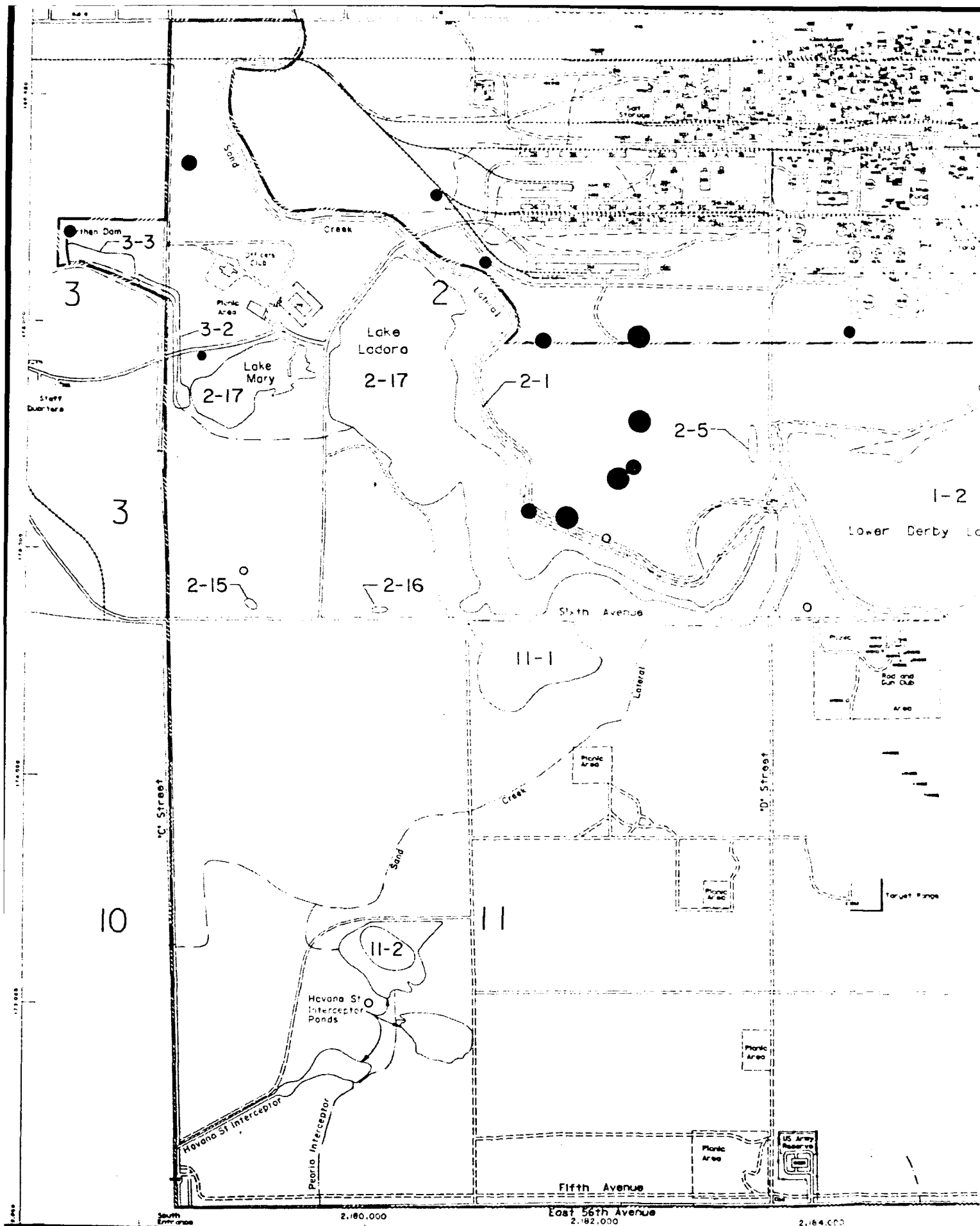
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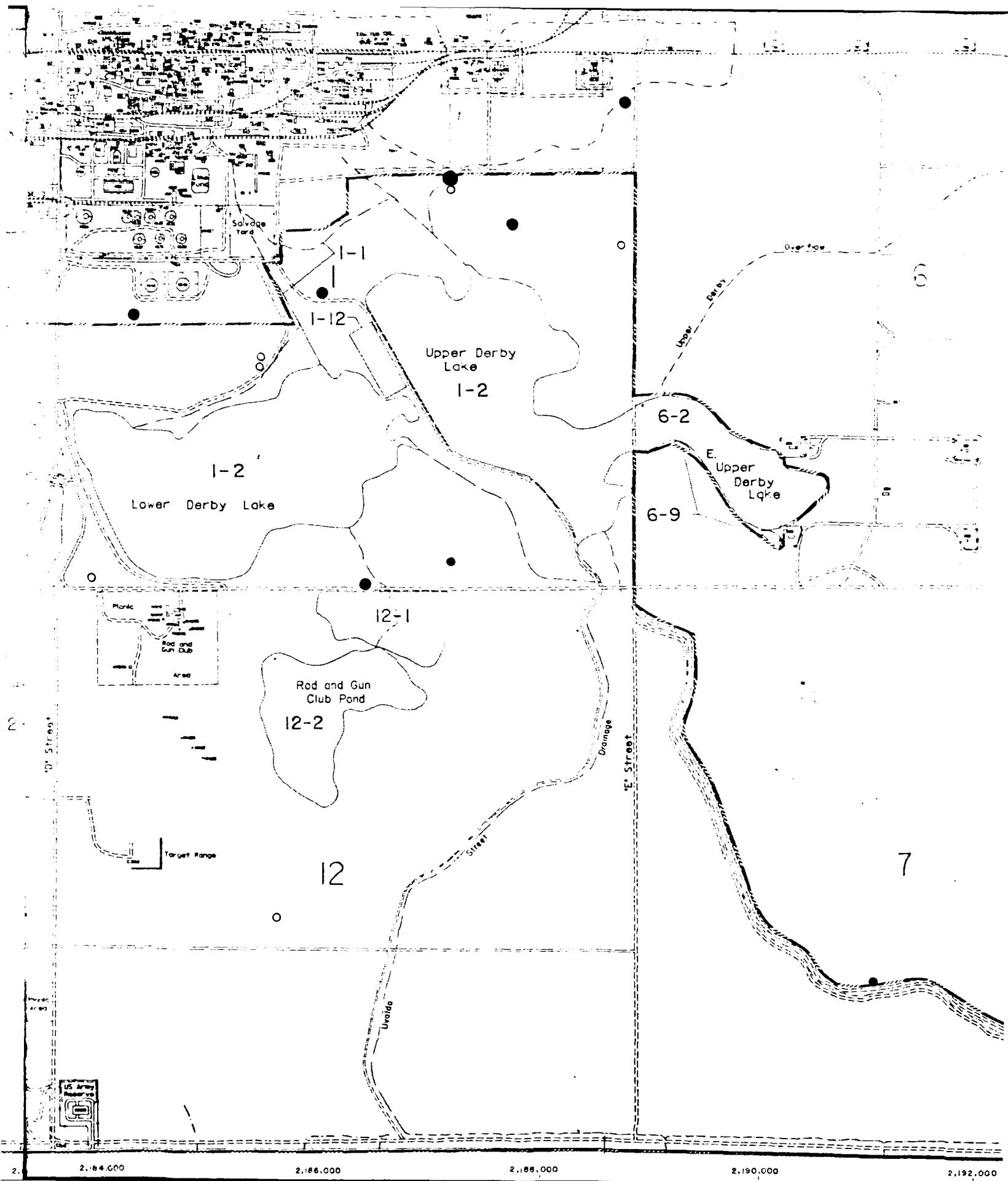
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SCALE: 1" = 1000'

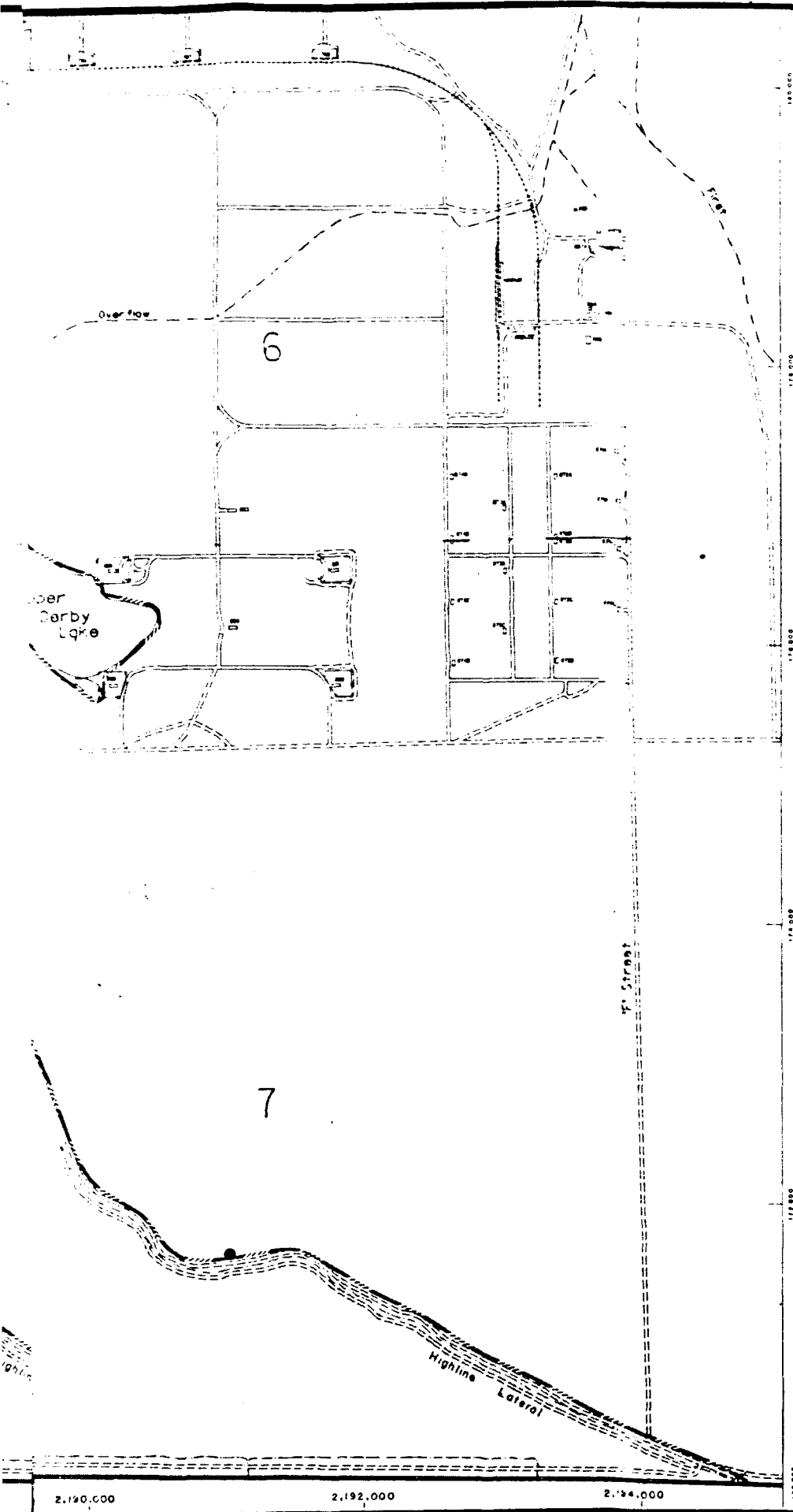
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.2-9
ICP Metals
in Surface Water
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

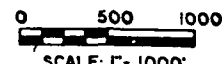
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL*
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

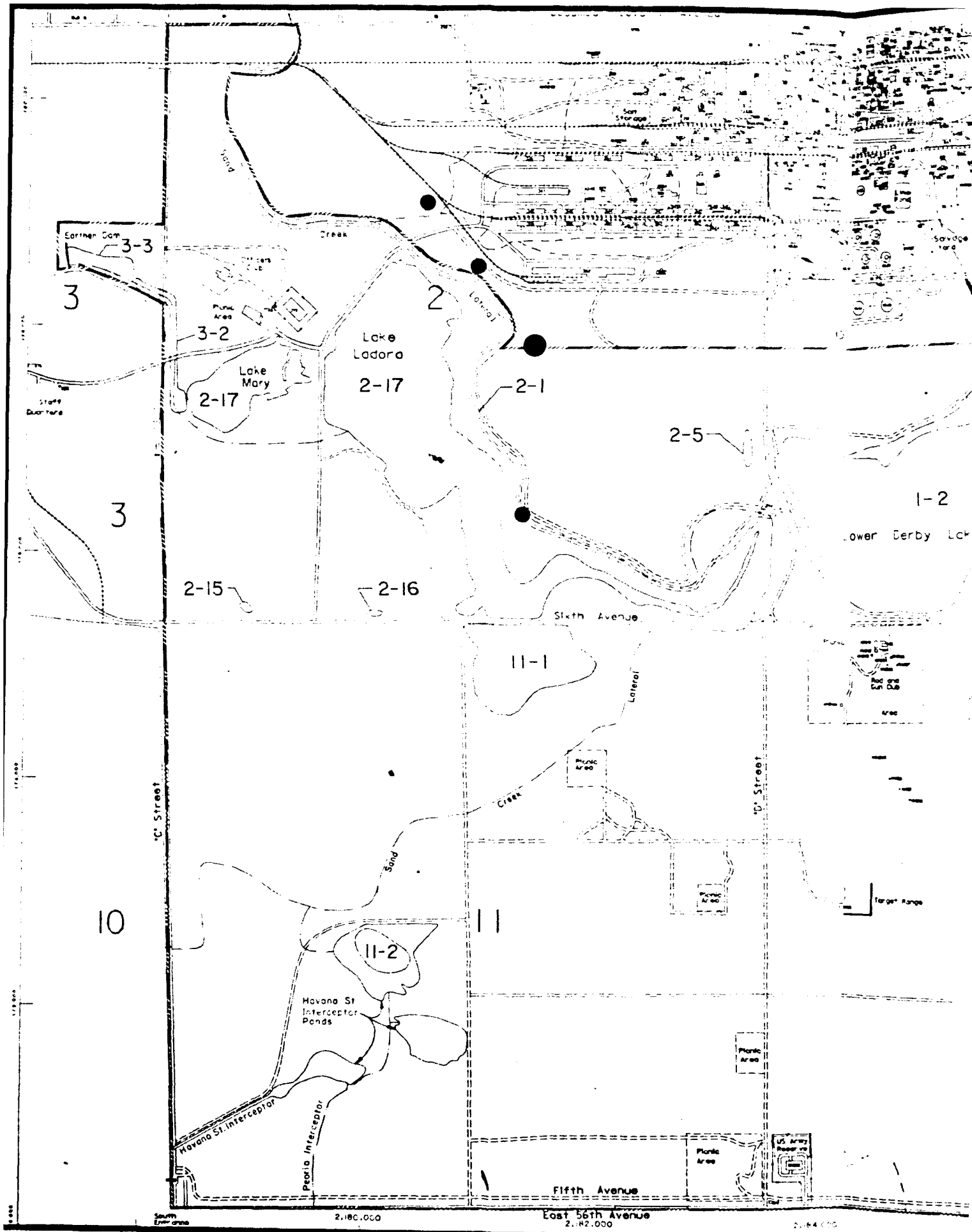
ROCKY MOUNTAIN ARSENAL LOCATION

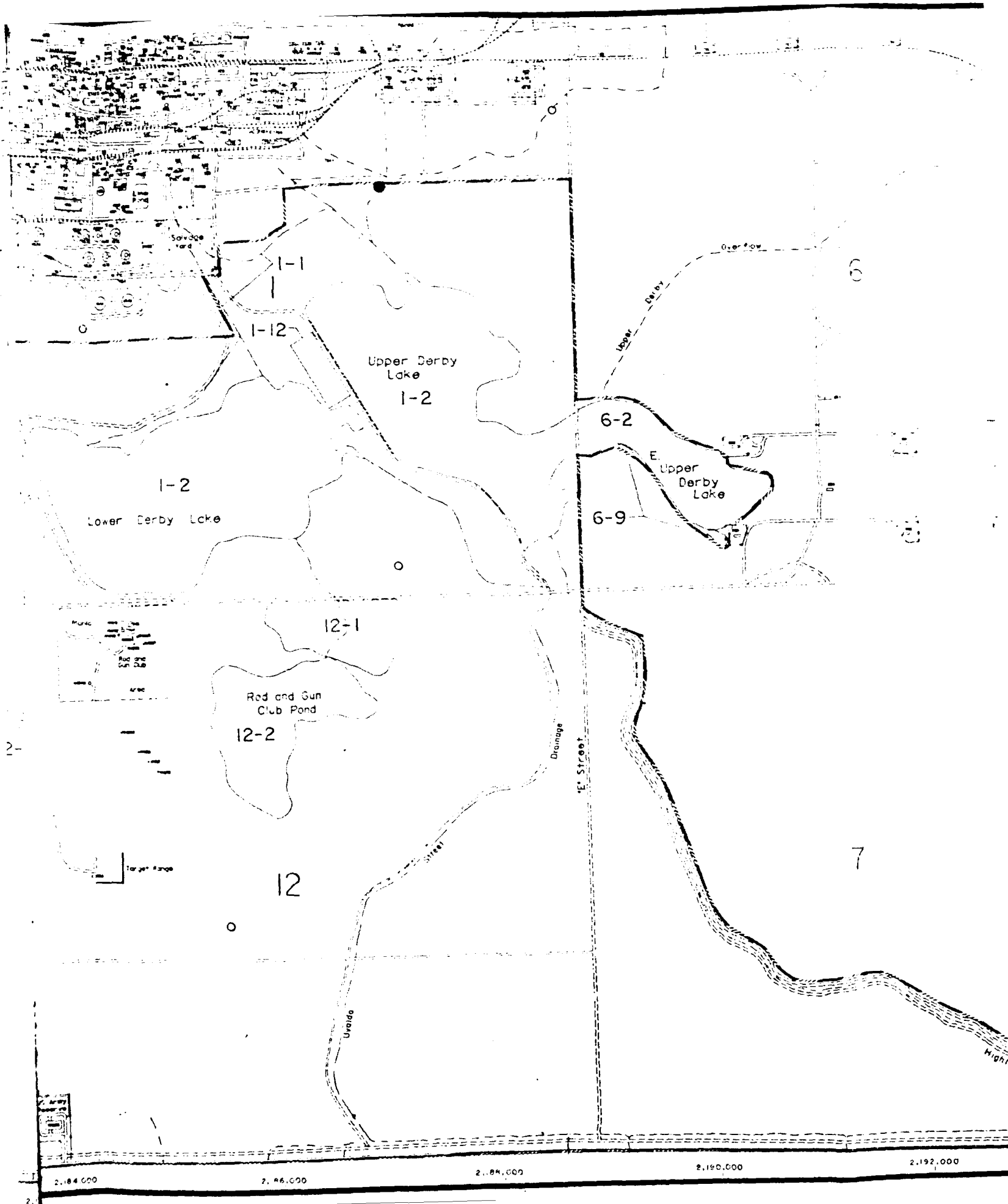


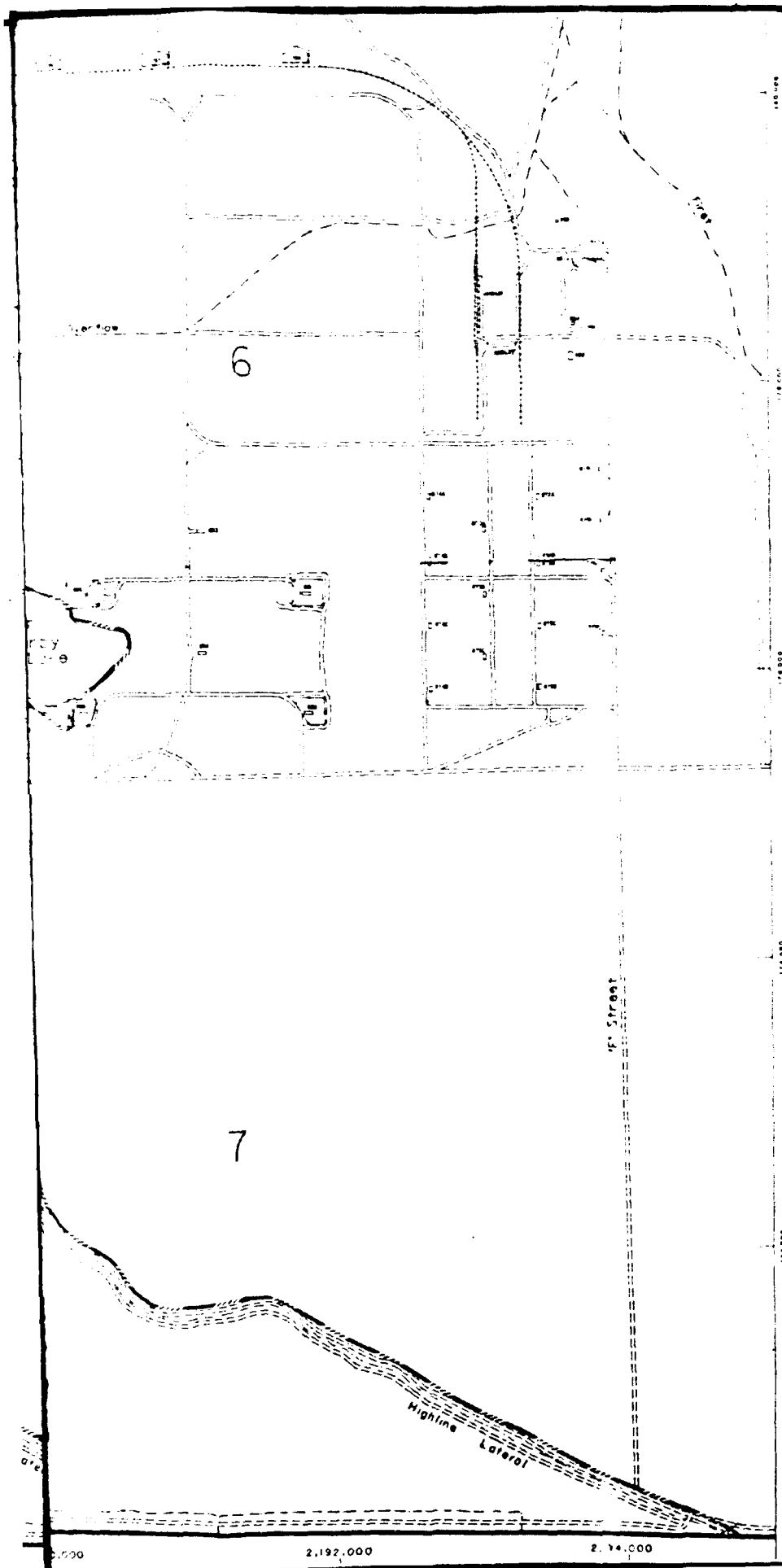
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-1
Volatile Halogenated Organics
in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

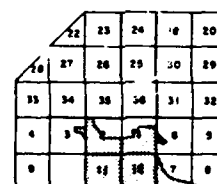
- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL*
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

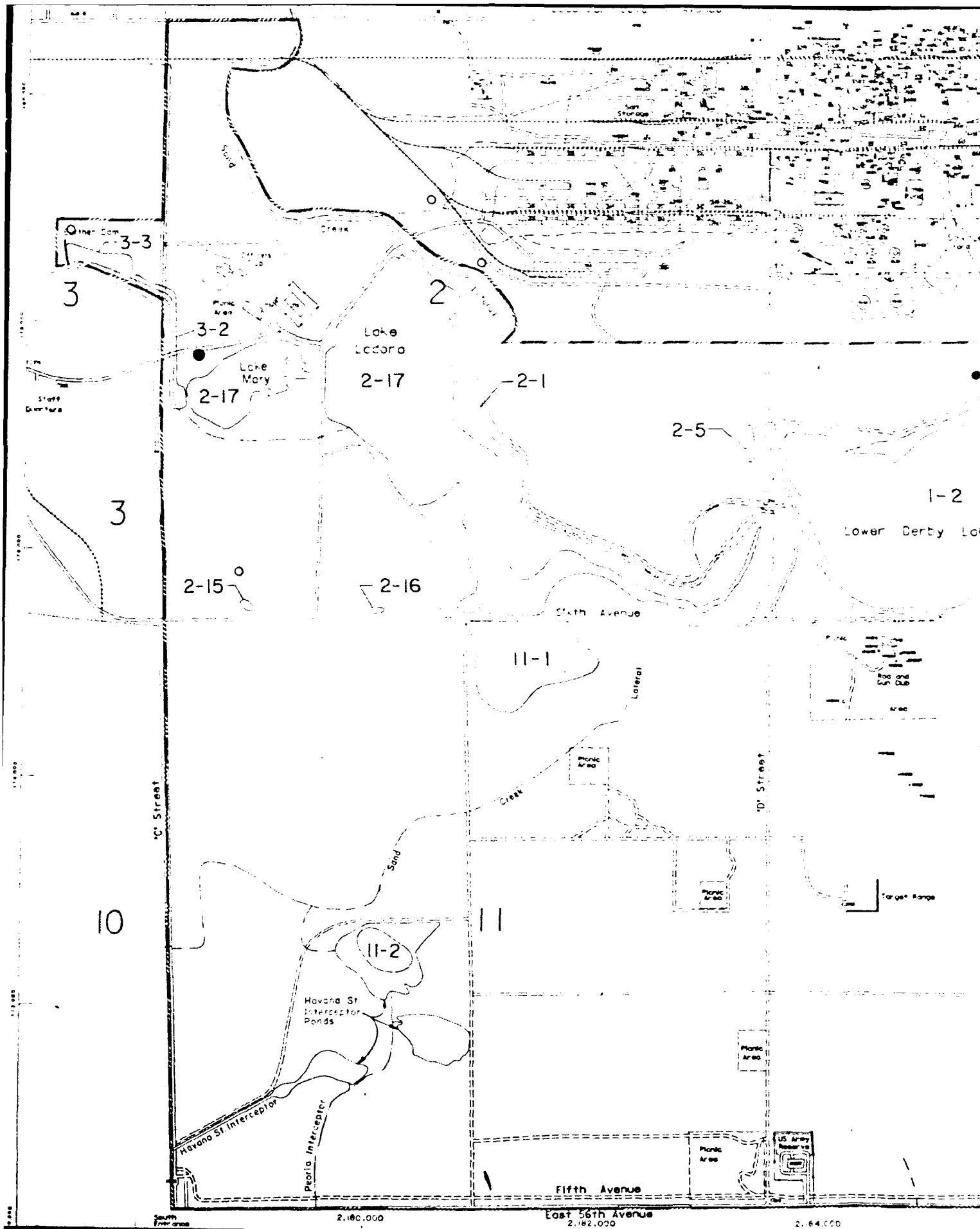
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SCALE: 1" = 1000'

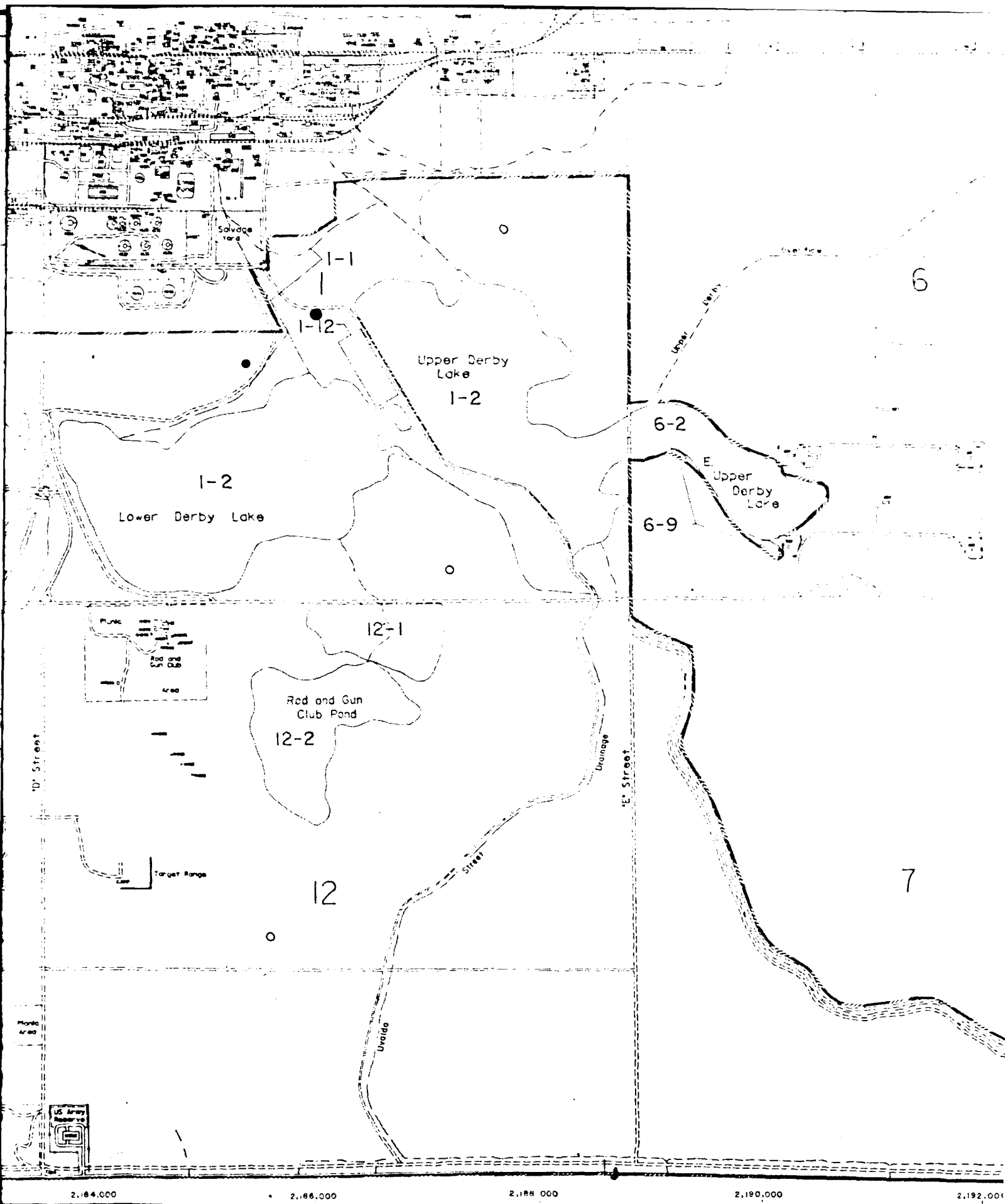
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-2
Volatile Halogenated Organics
in Groundwater (WBZ 2)
Rocky Mountain Arsenal
Prepared by:

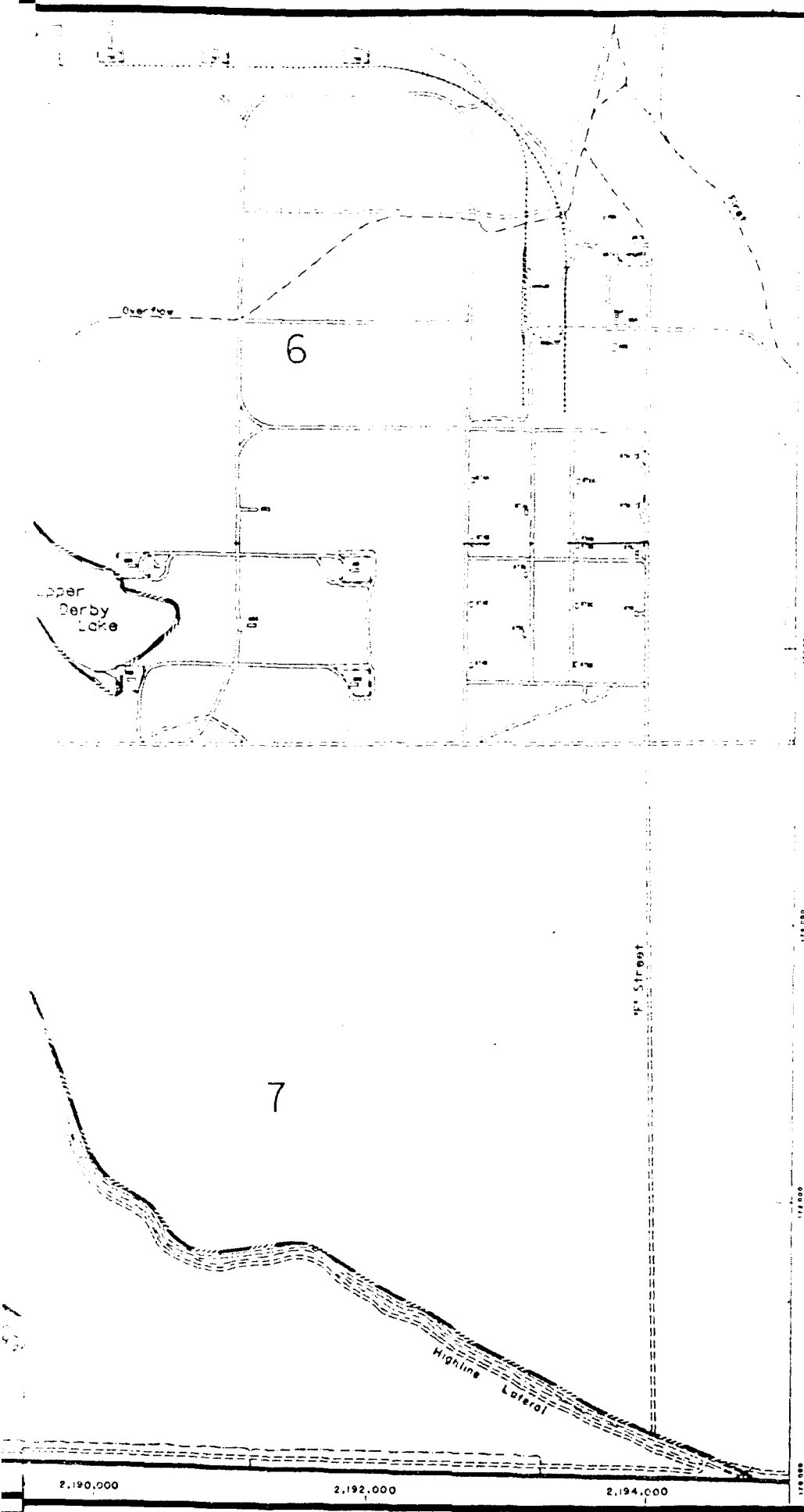
Ebasco Services Incorporated





6

7



LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- ○ BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION

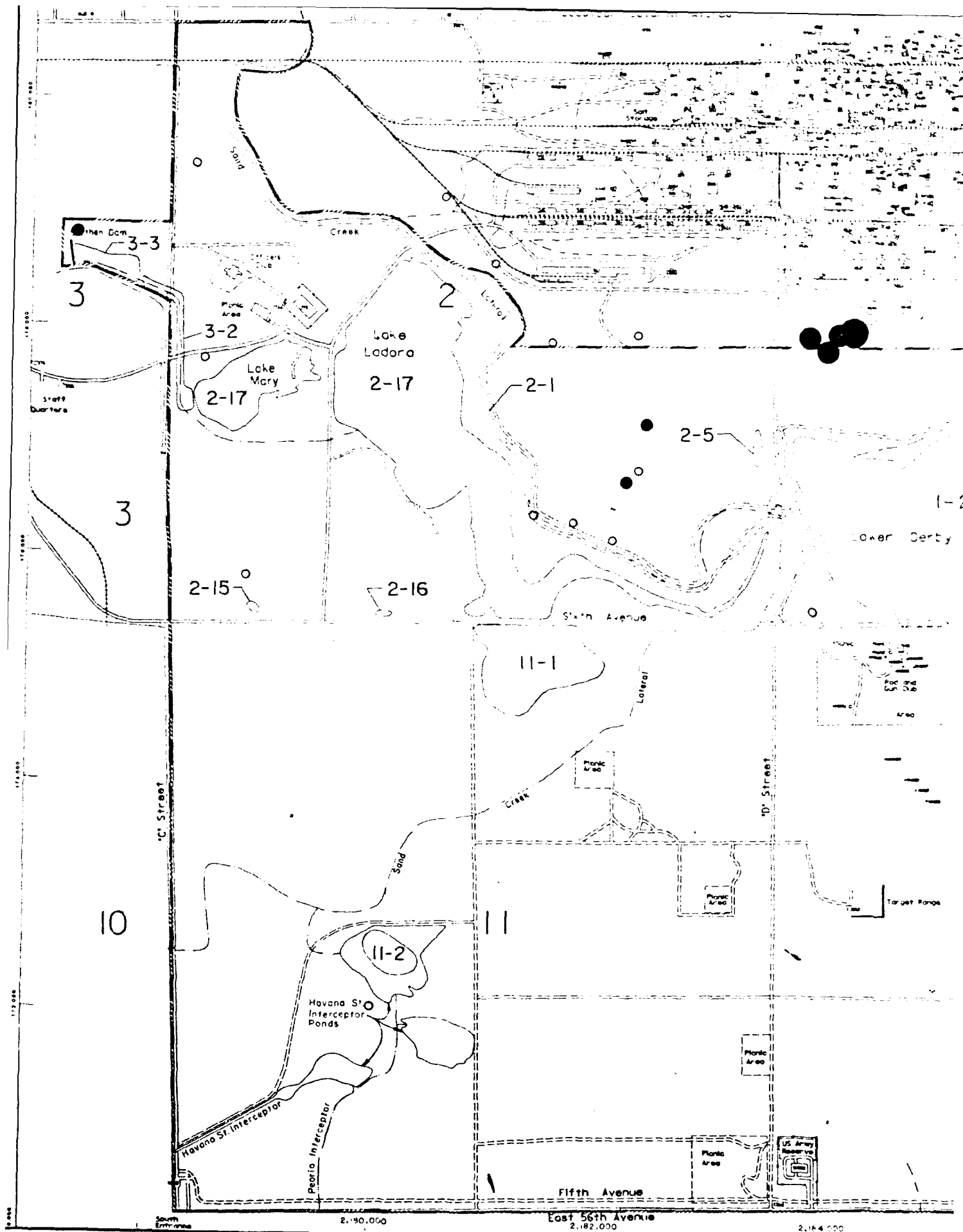


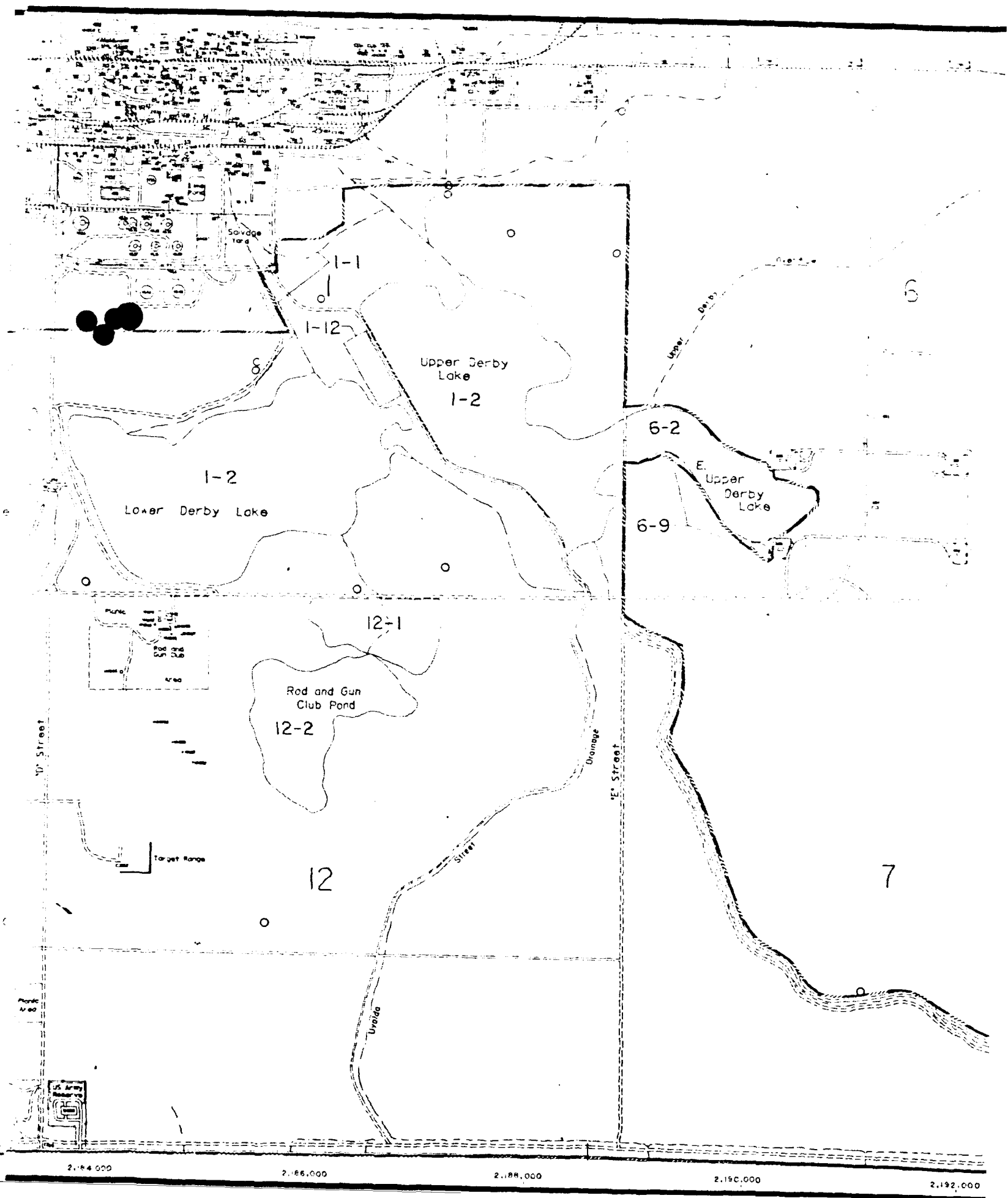
0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-3
Volatile Halogenated Organics
in Groundwater (WBZ 3-4)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





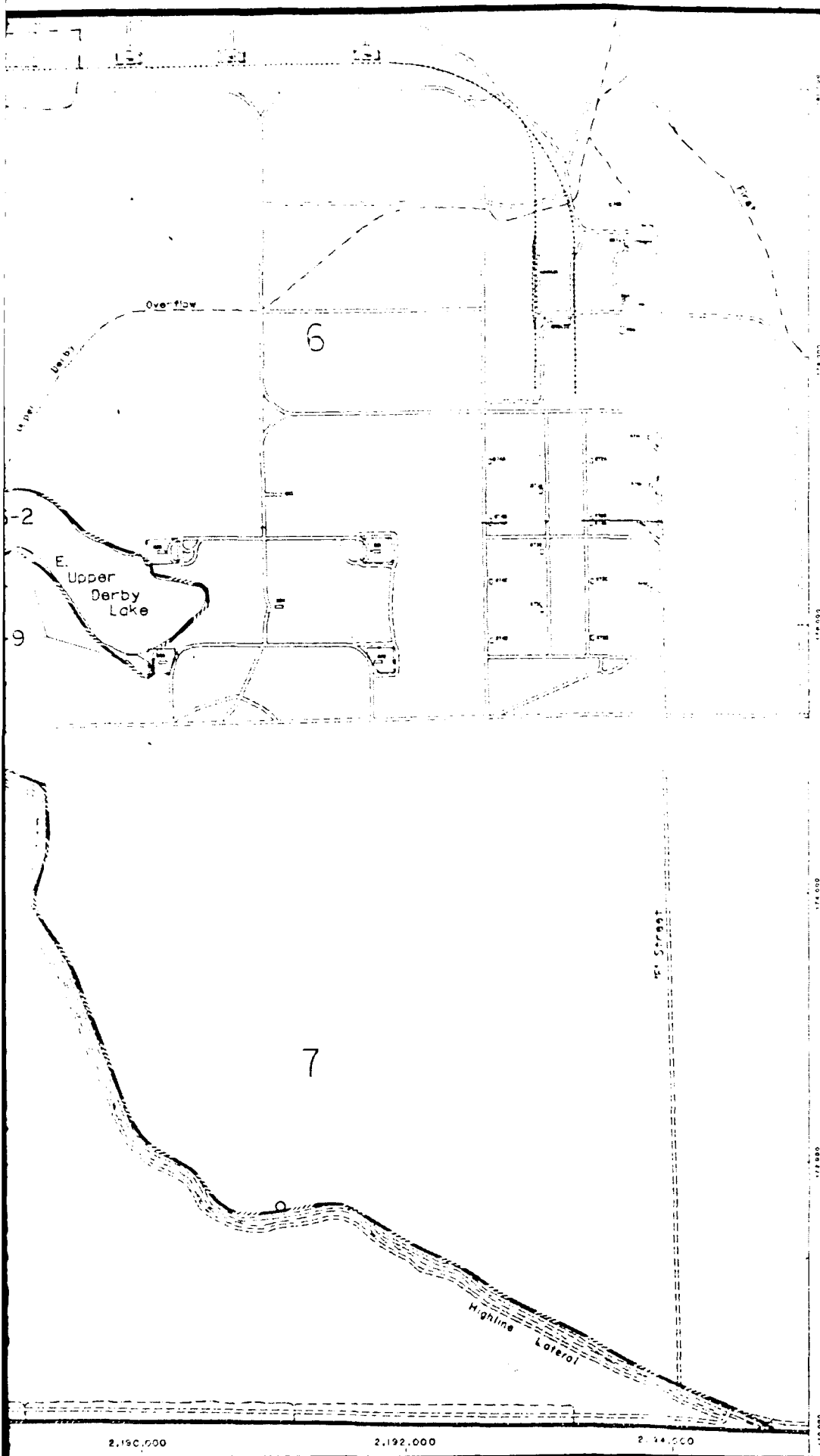
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2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

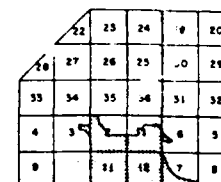
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

0 500 1000

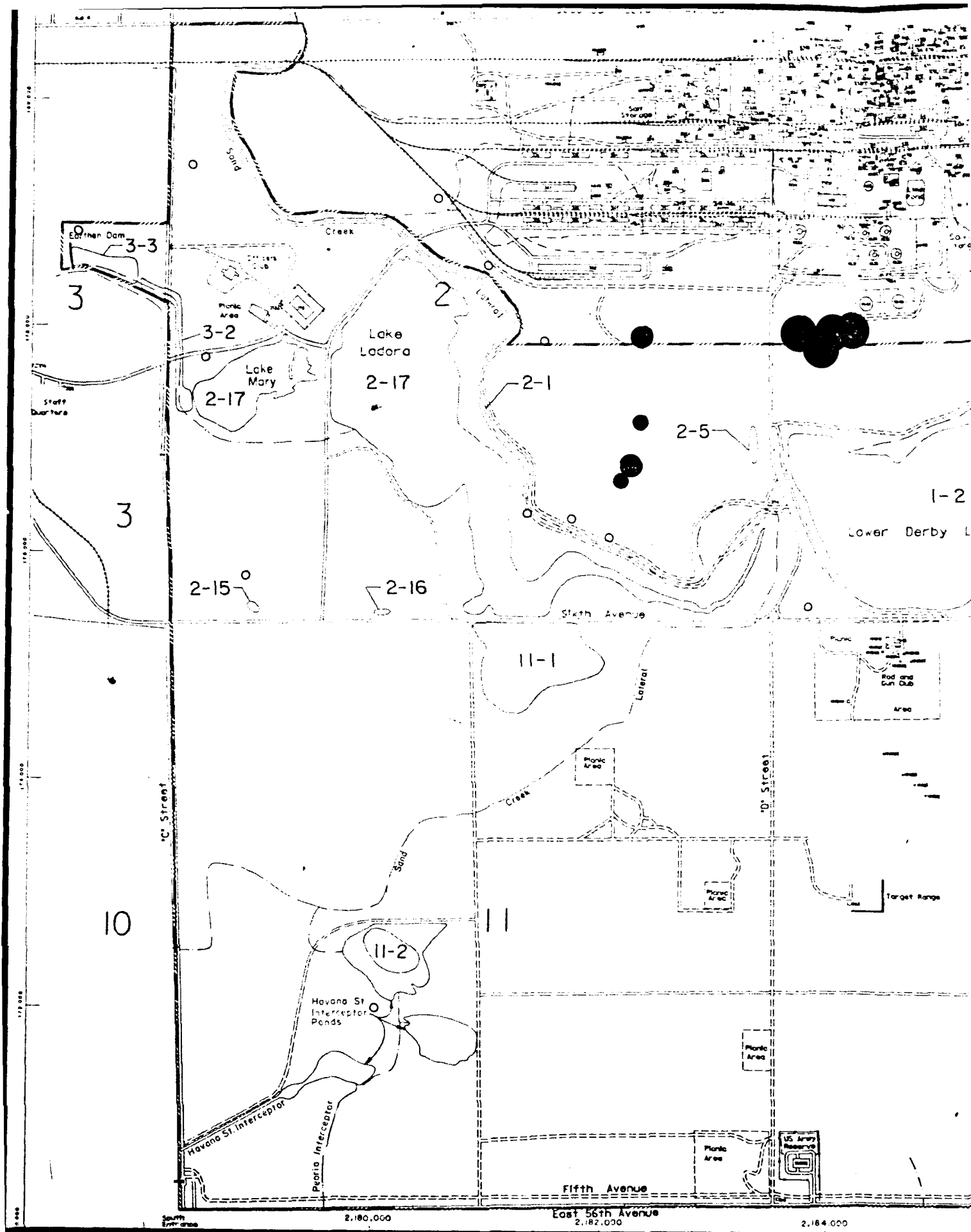
SCALE: 1" = 1000'

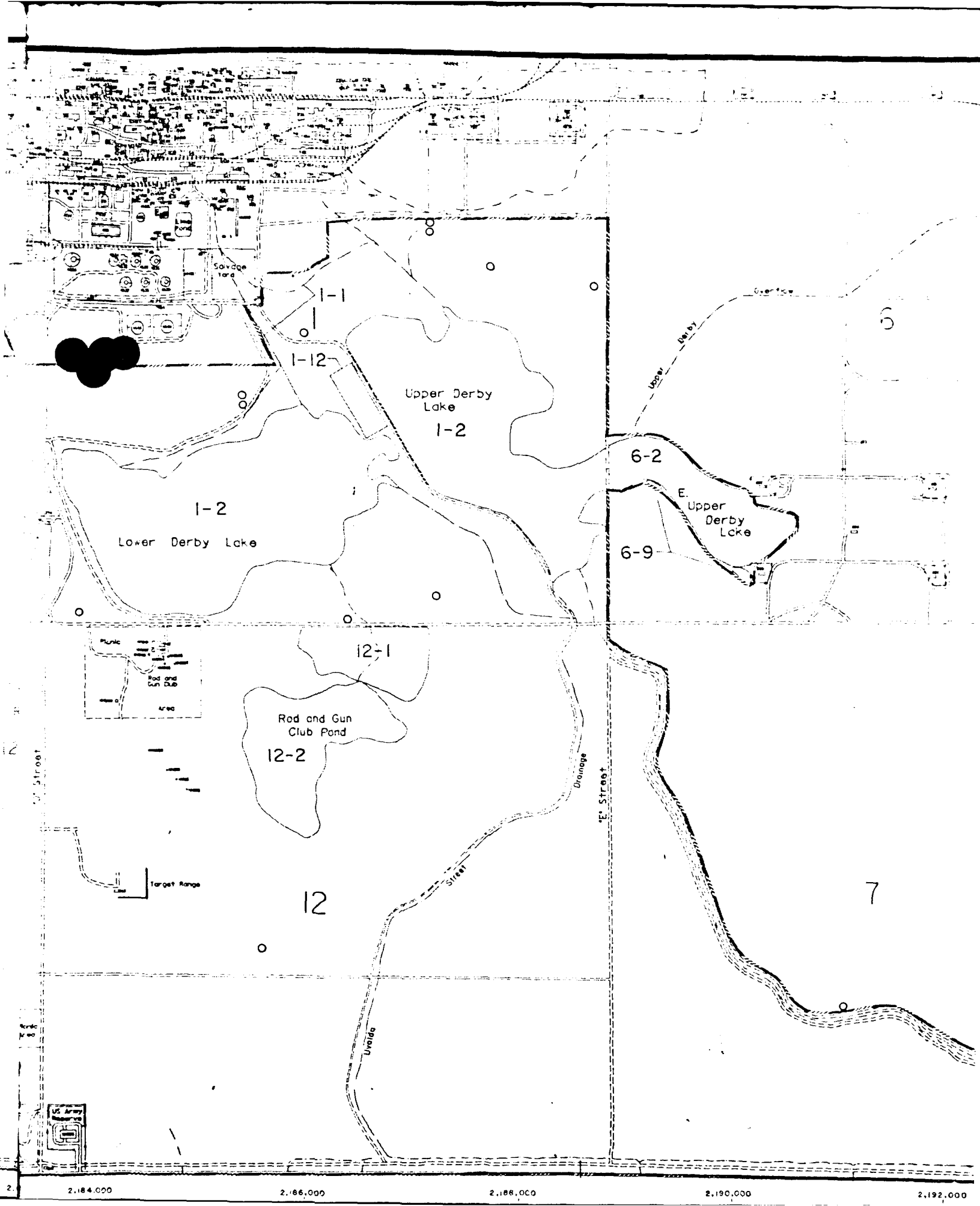
Prepared for:

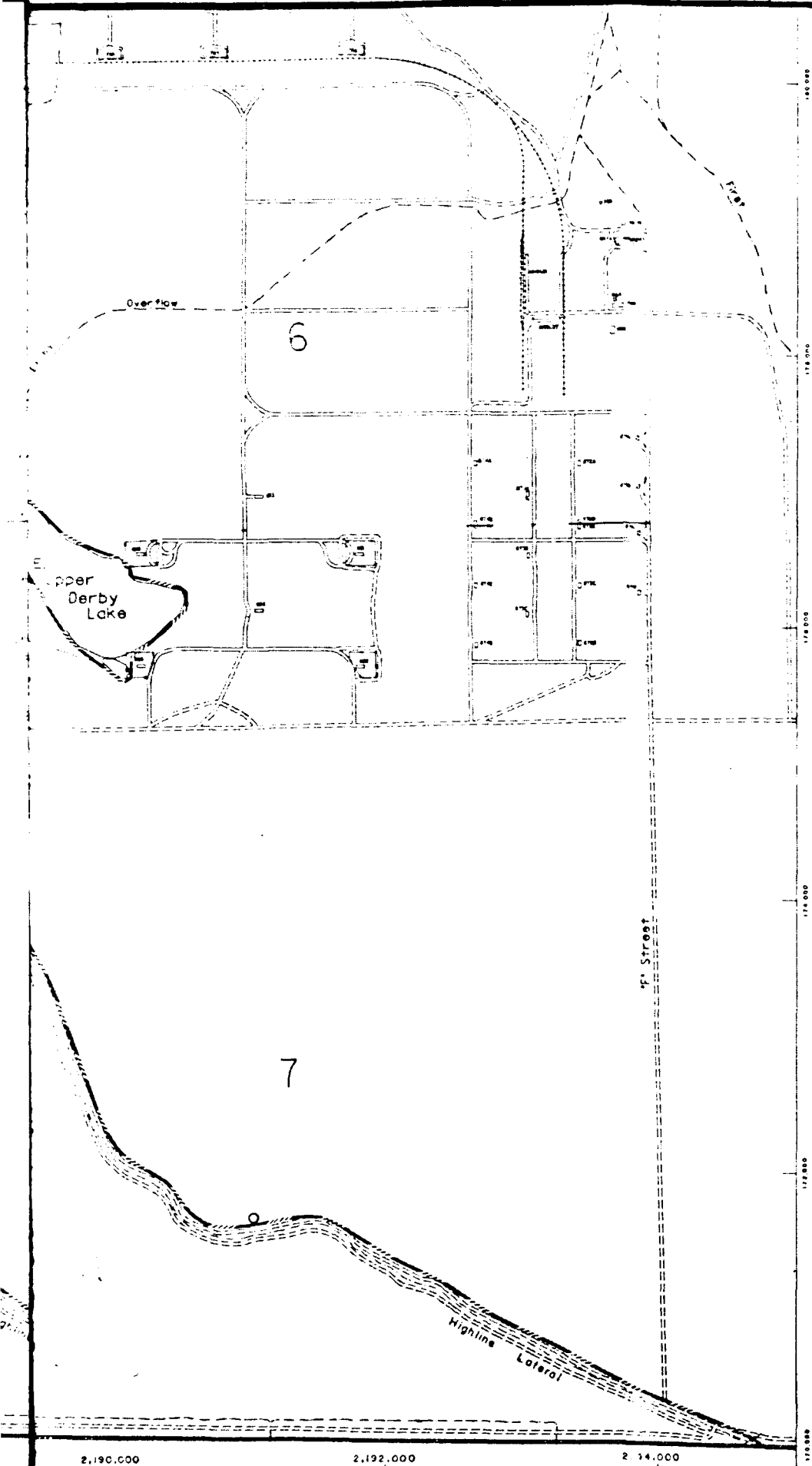
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-4
Volatile Hydrocarbons
in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal

Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary

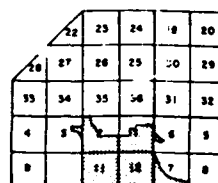
174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

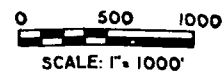
- BCRL *
- 0-1.0
- > 1.0-10
- > 10-100
- > 100-1,000
- > 1,000-10,000
- > 10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



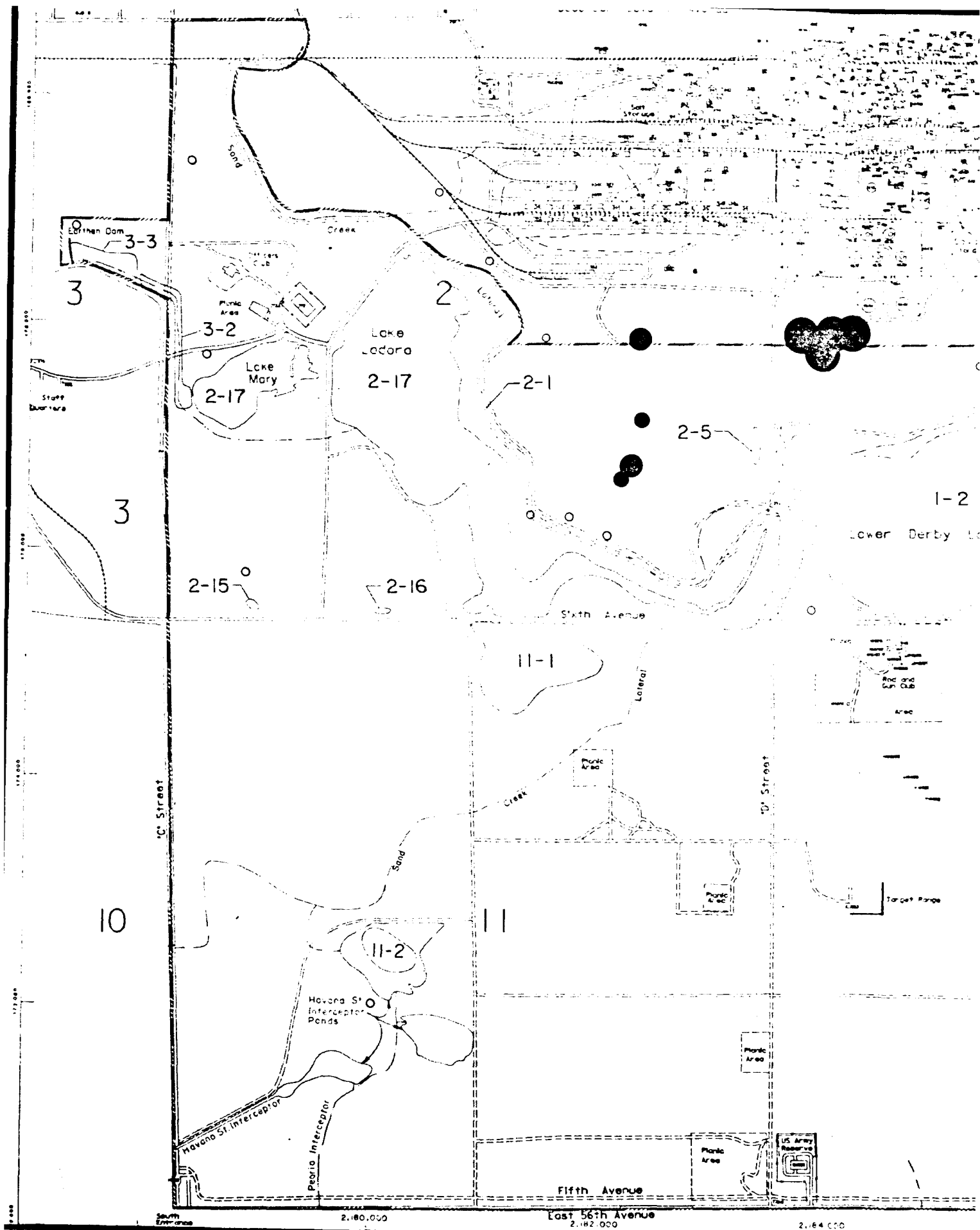
1" = 5 MILES

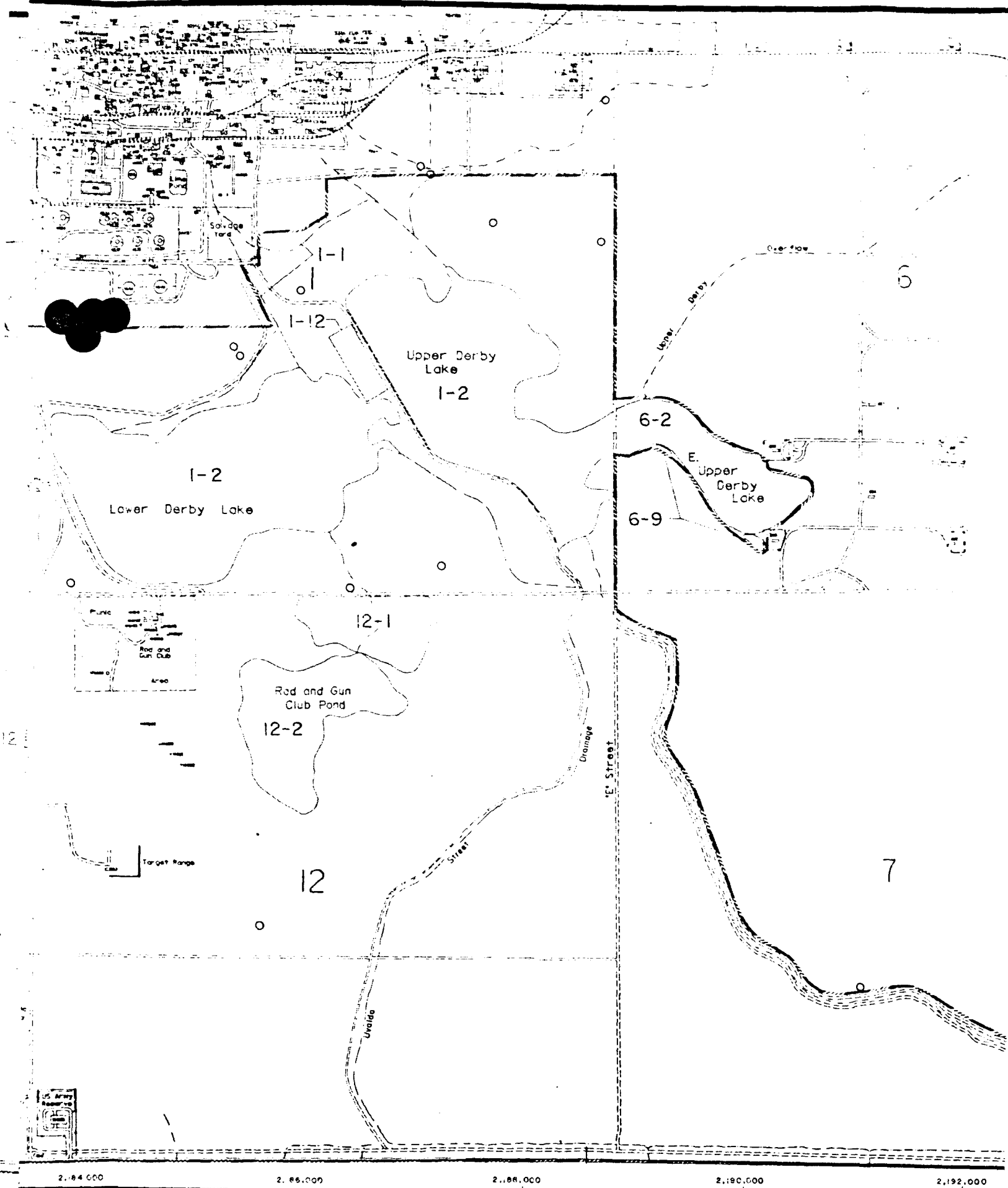


Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-5
Volatile Aromatic Organics
in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





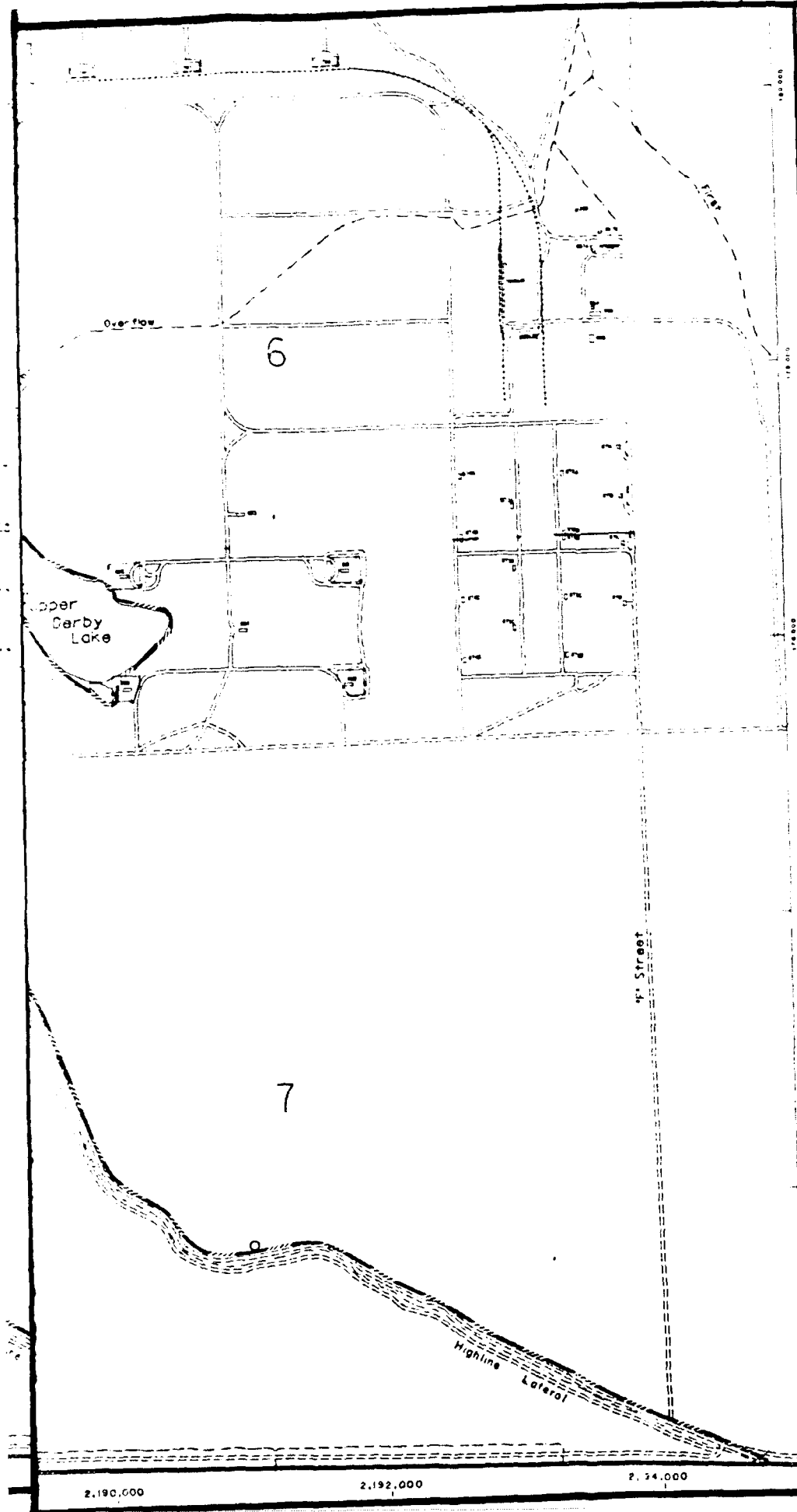
2,784 000

2. 85,000

2,08,000

2,190,000

2,192,000



LEGEND

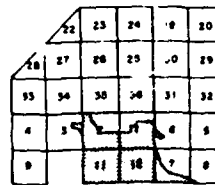
- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



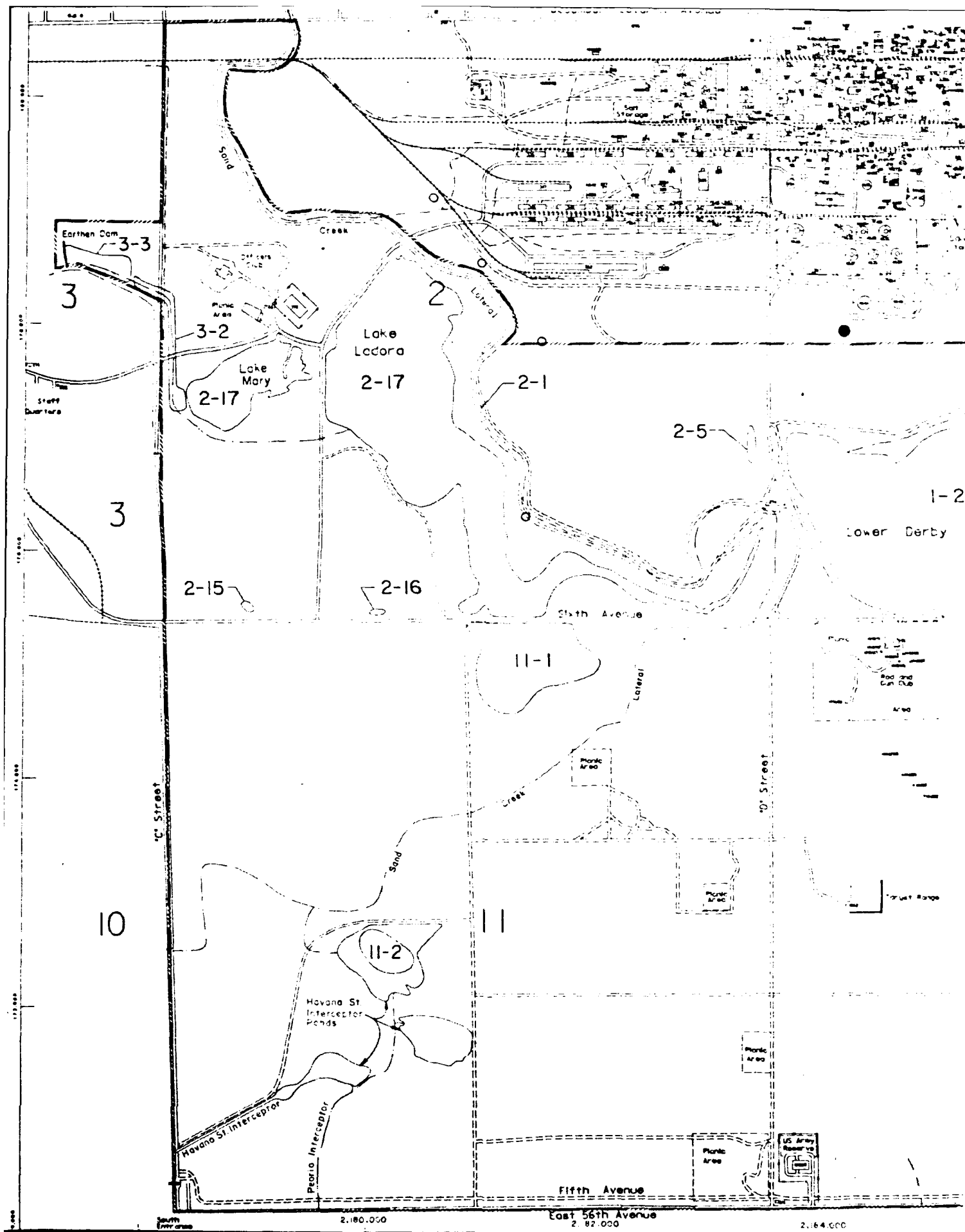
1" = 5 MILES

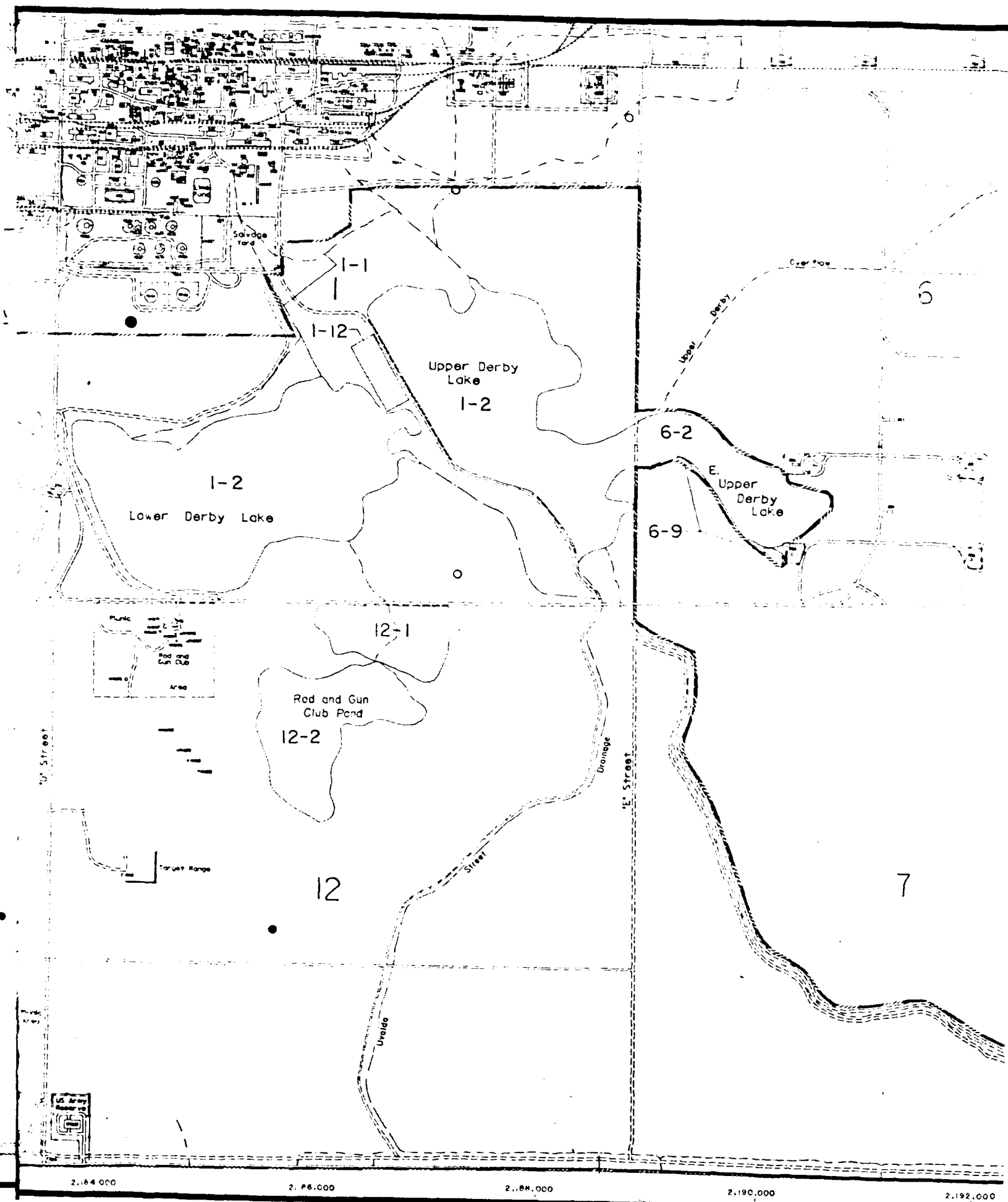


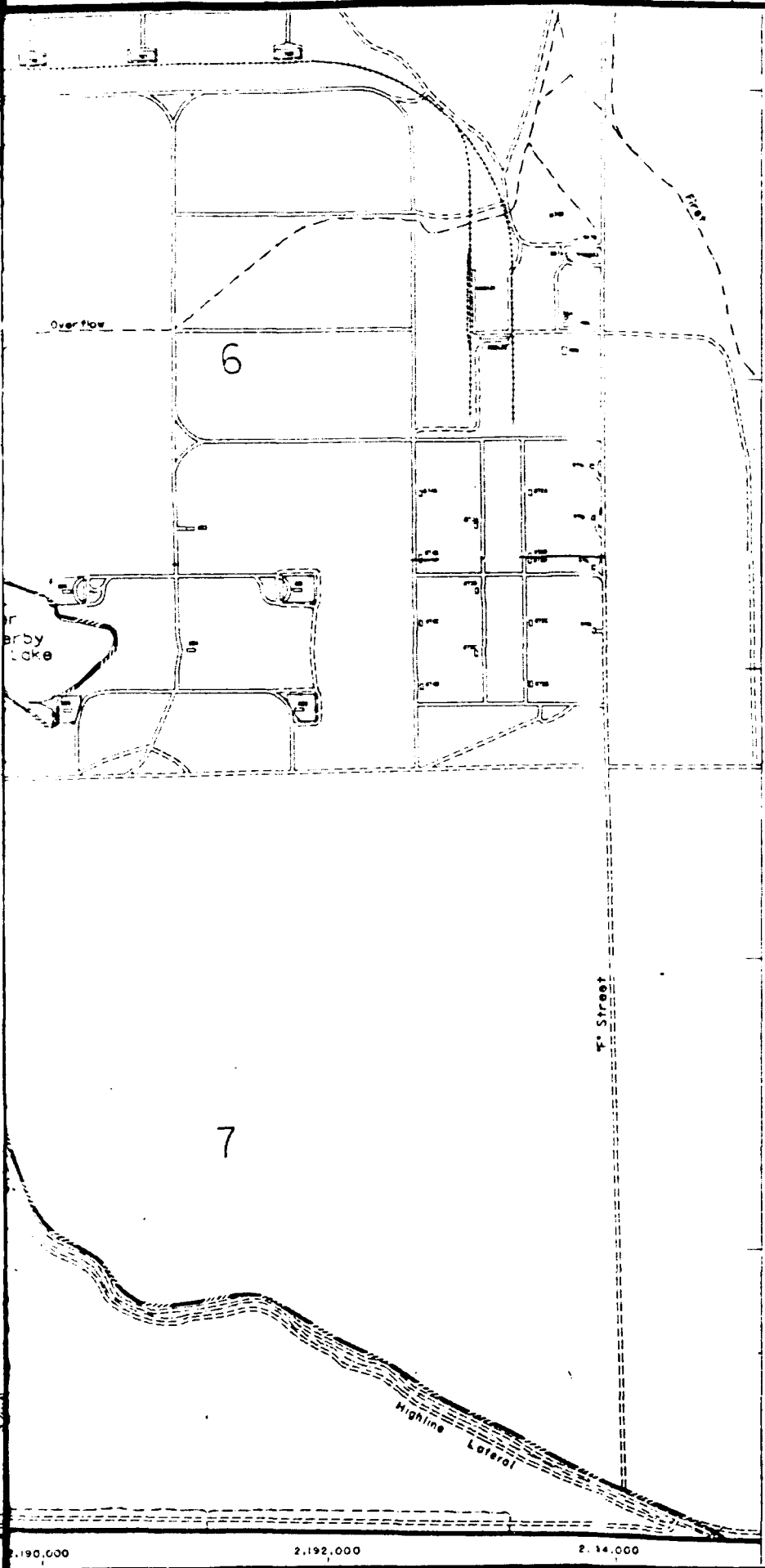
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-6
Volatile Aromatic Organics-Benzene
Only-in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







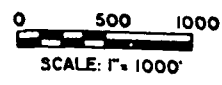
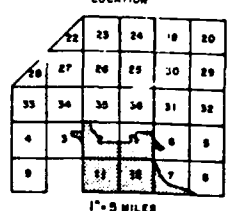
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

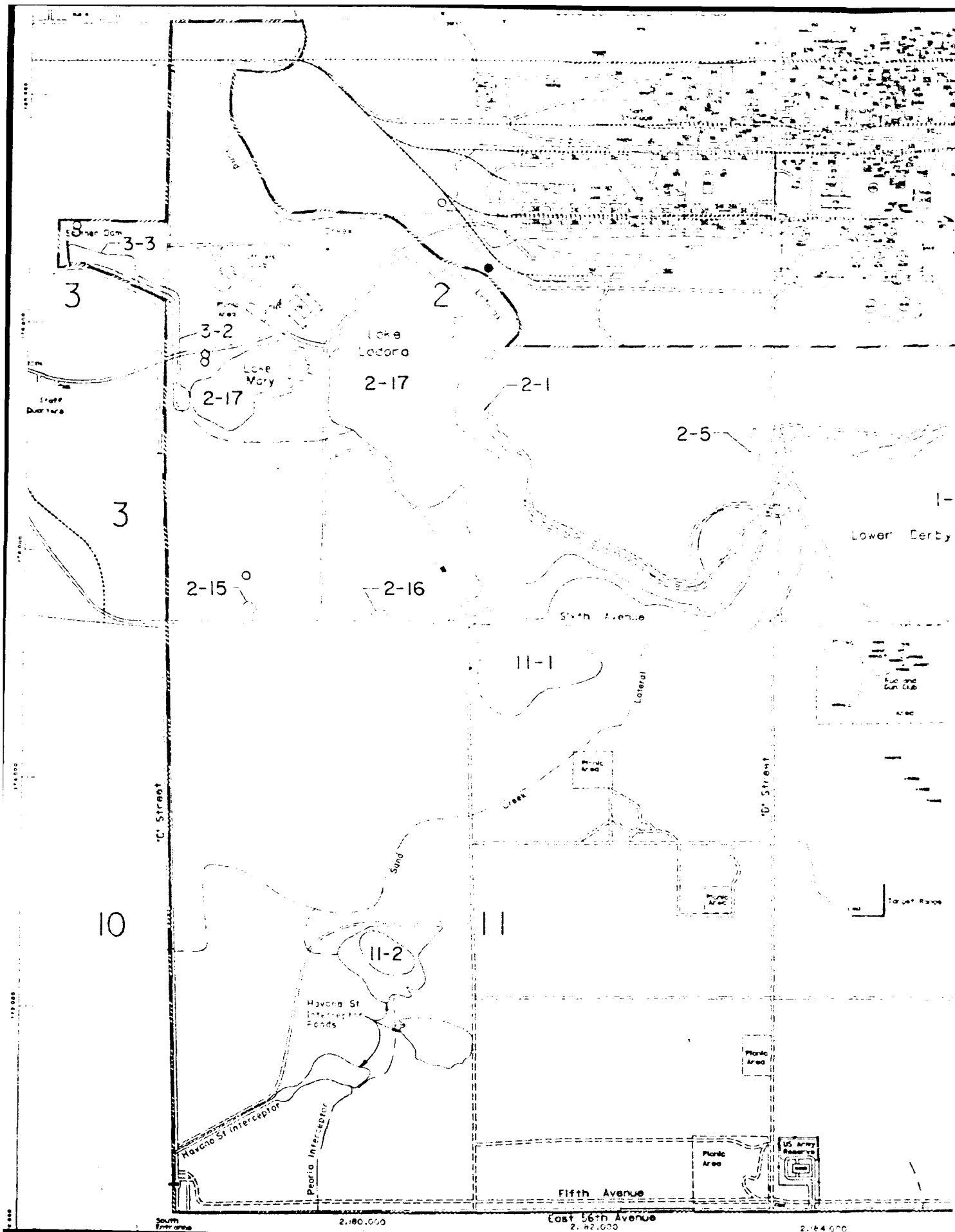
- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000
- * Below Certified Reporting Limits (BCRL)

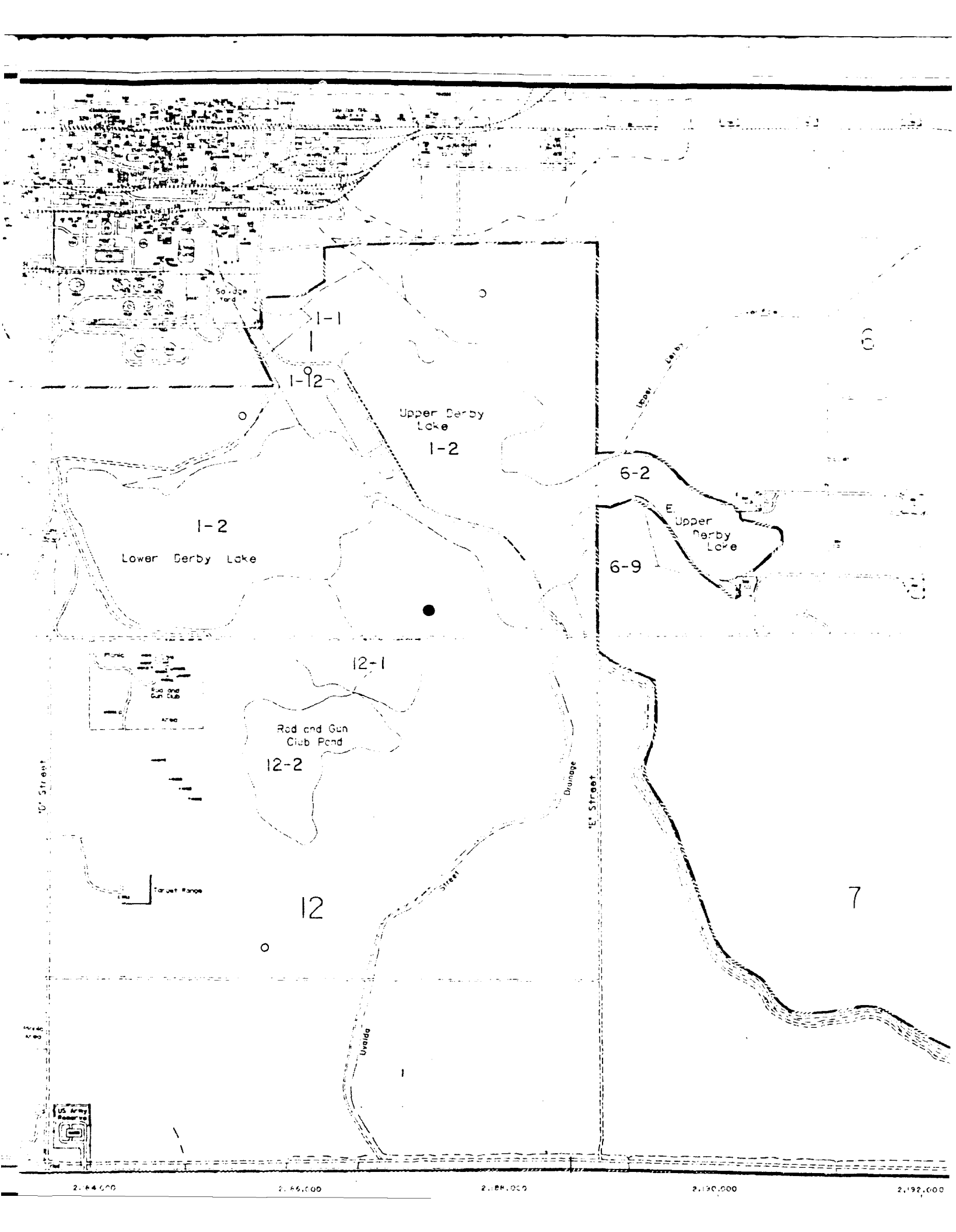
ROCKY MOUNTAIN ARSENAL LOCATION

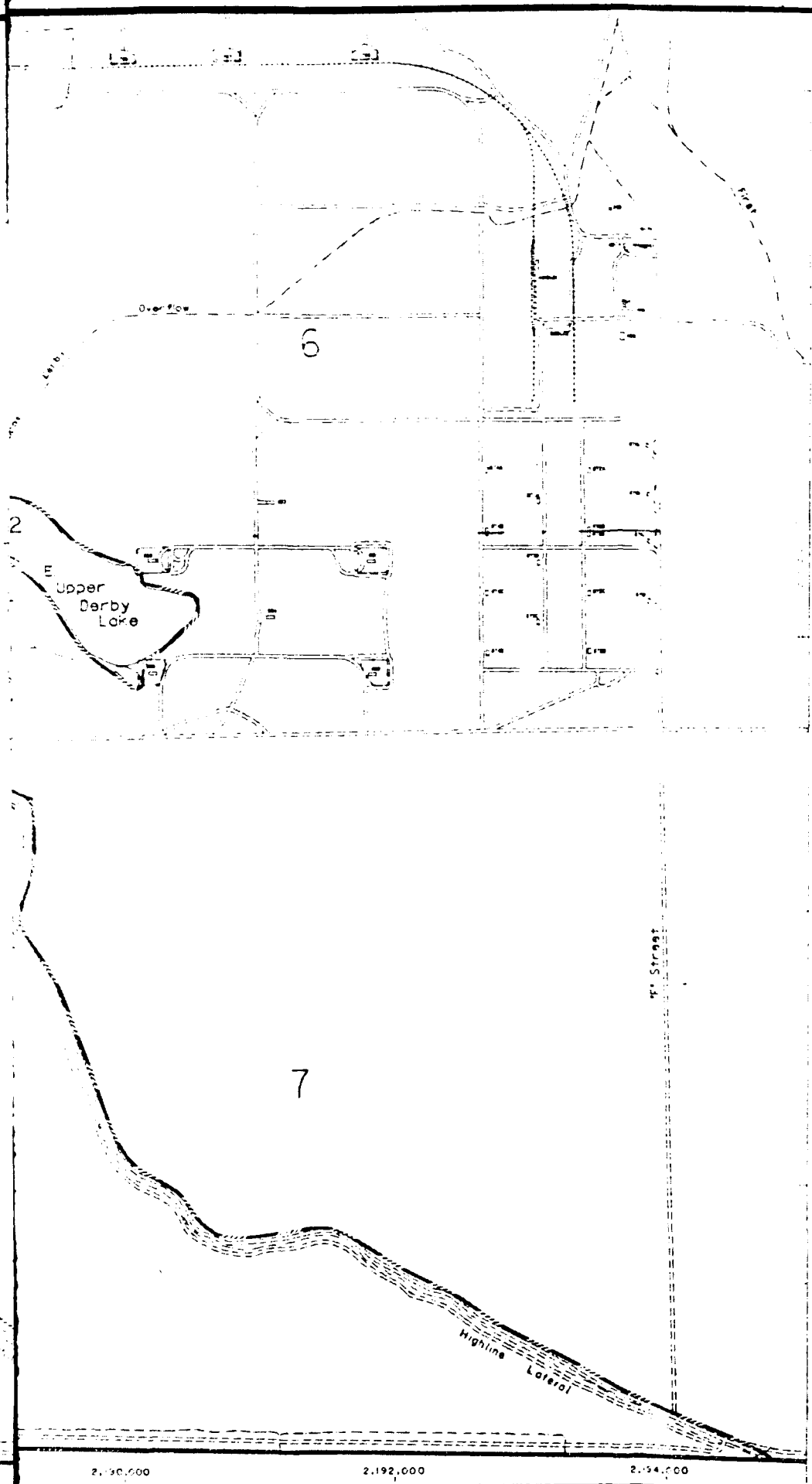


Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-7
Volatile Aromatic Organics-Benzene
Only-in Groundwater (WBZ 2)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

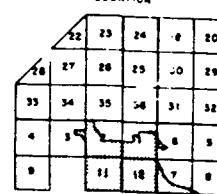
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

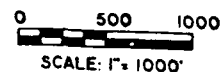
- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

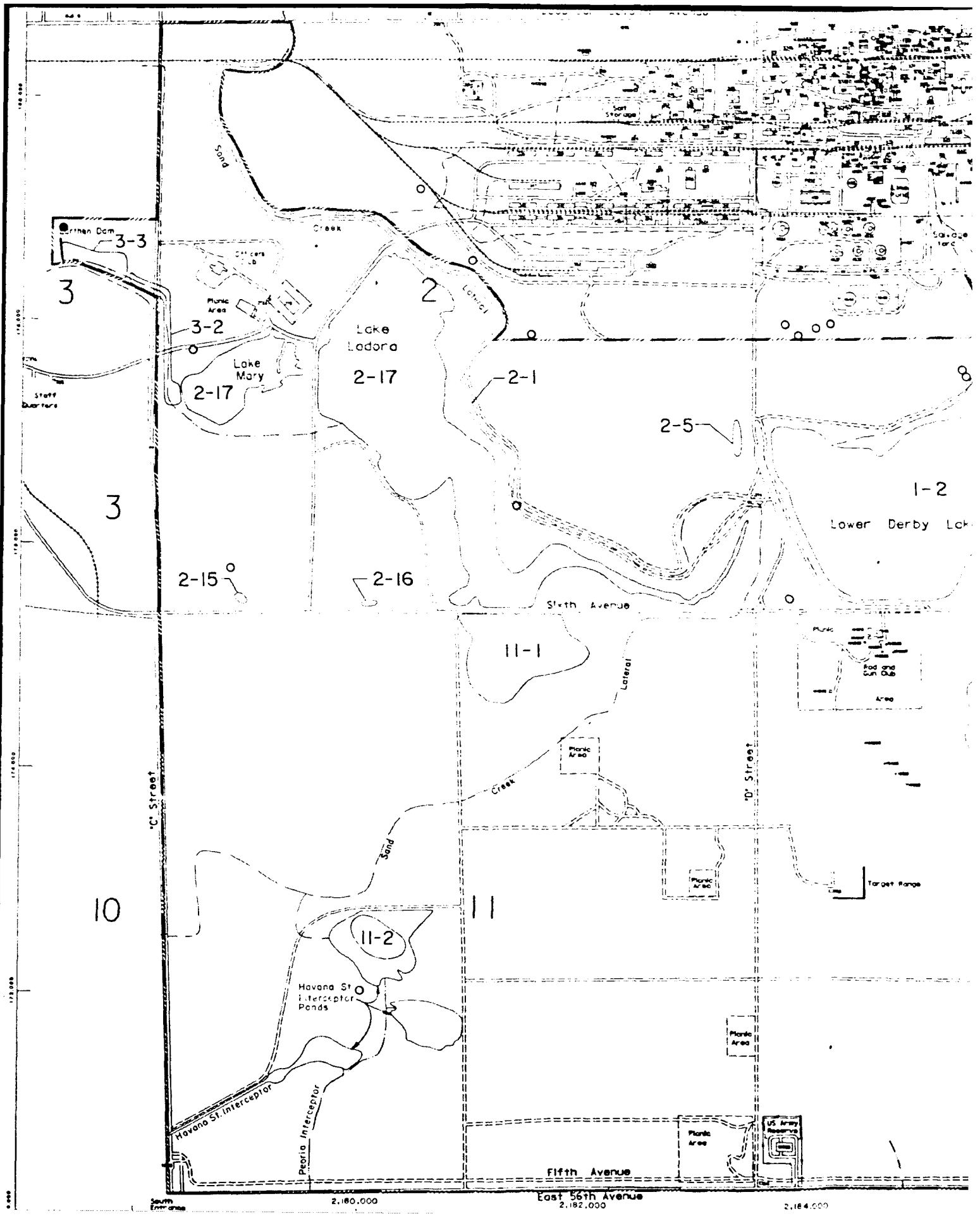


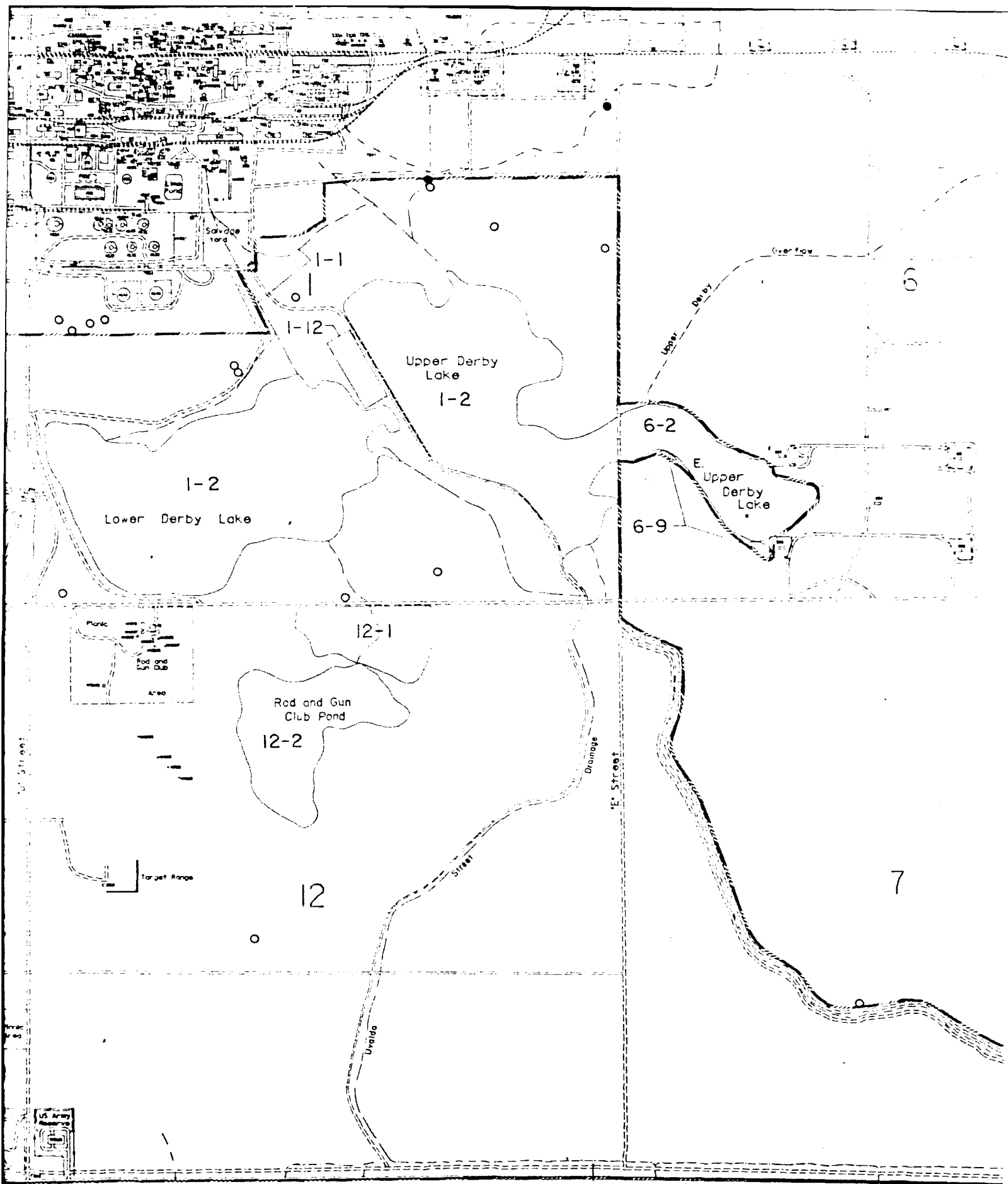
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-8
Volatile Aromatic Organics-Benzene
Only-in Groundwater (WBZ 3-4)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





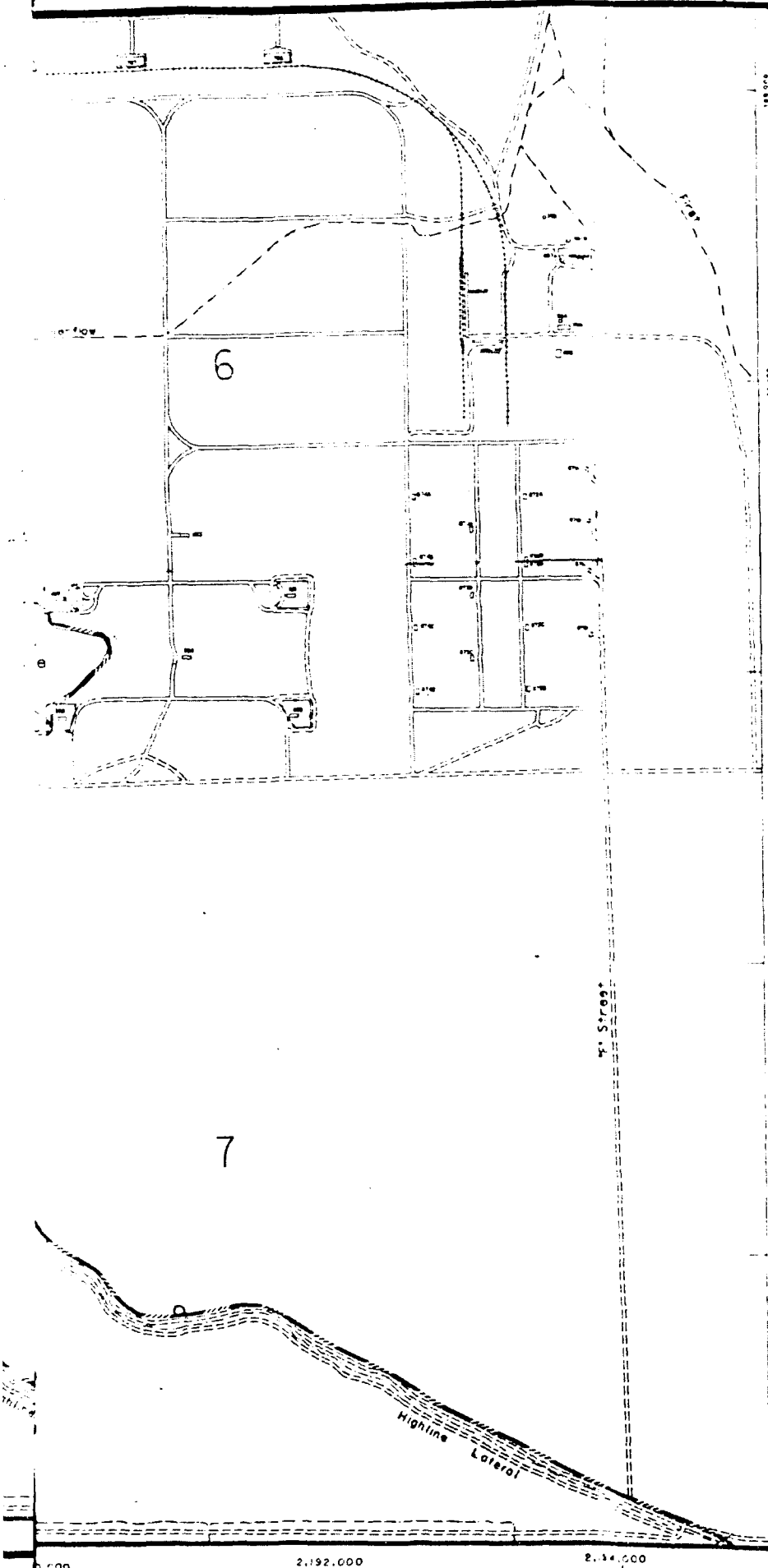
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

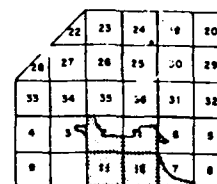
174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

0 500 1000
SCALE: 1" = 1000'

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Program Manager's Office for
Rocky Mountain Arsenal Cleanup

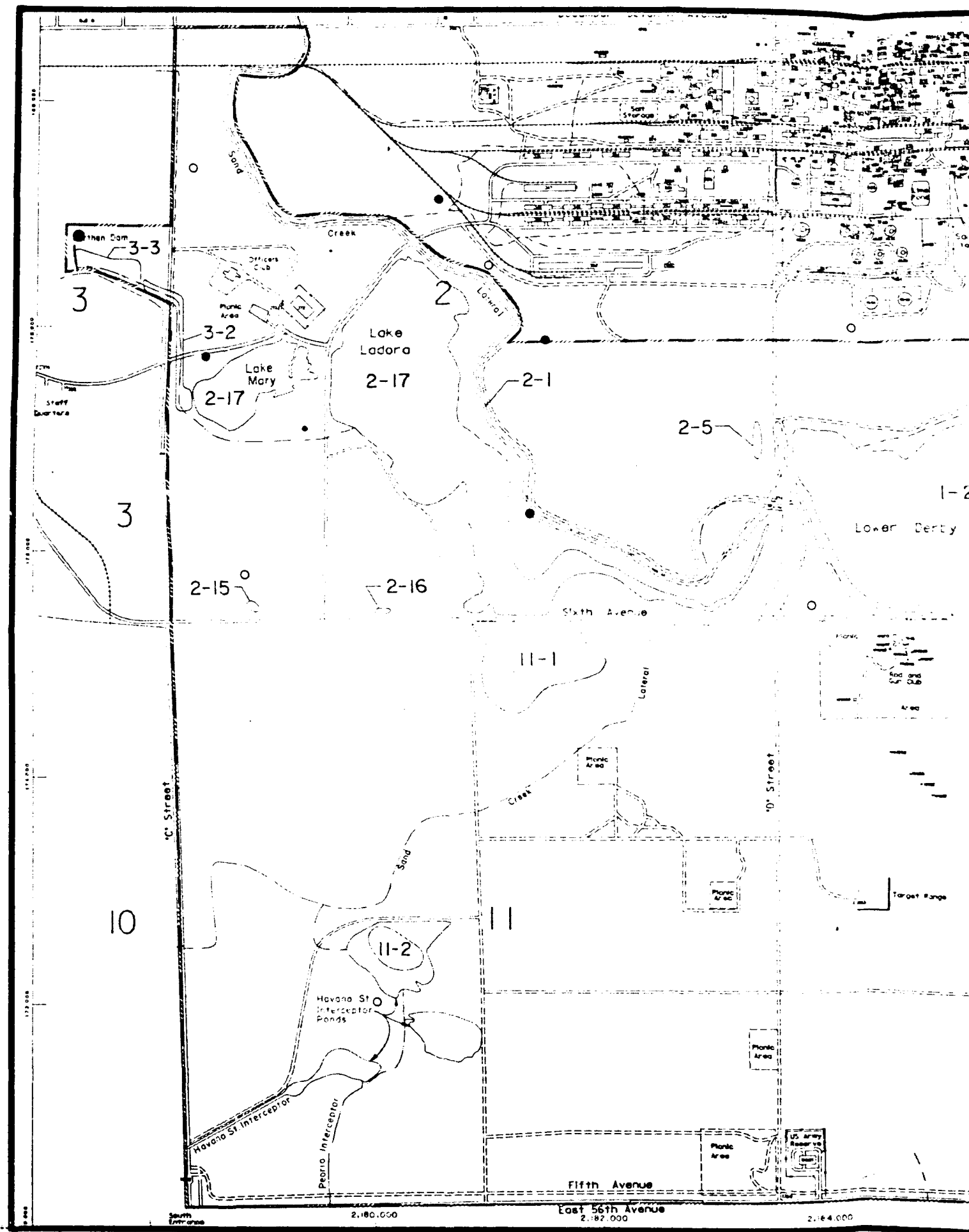
FIGURE: SSA 2.3-9

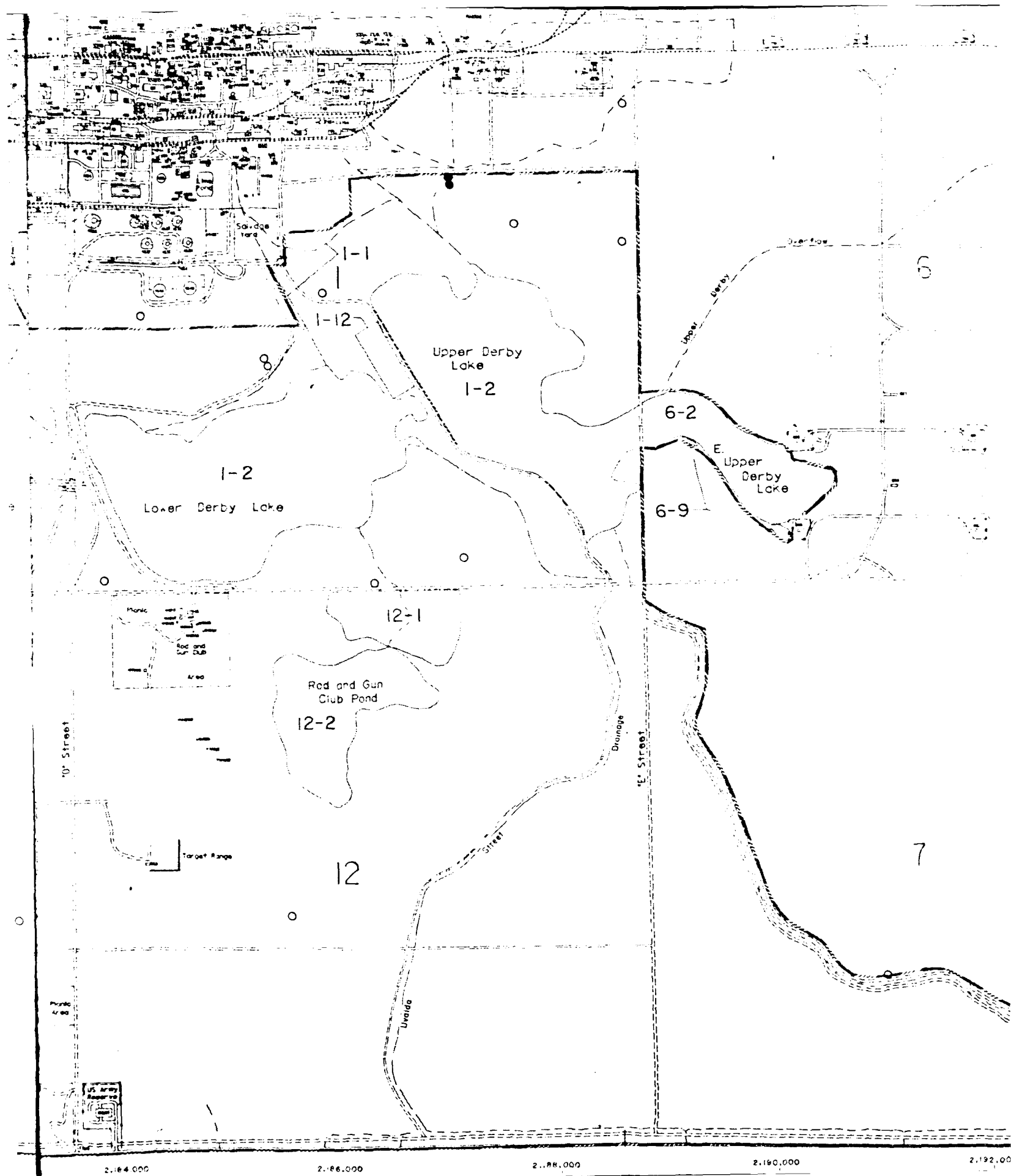
Dibromochloropropane
in Groundwater (WBZ 1A-1)

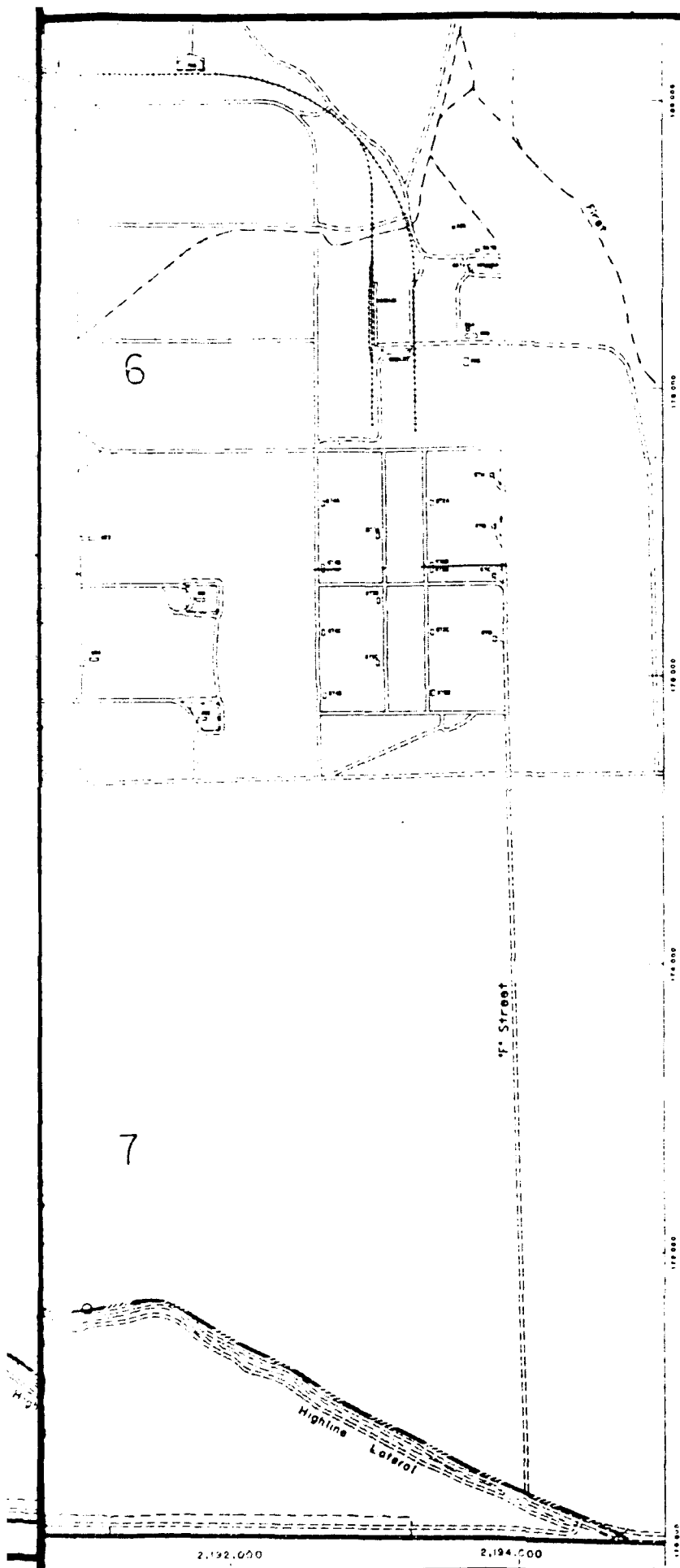
Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL *
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



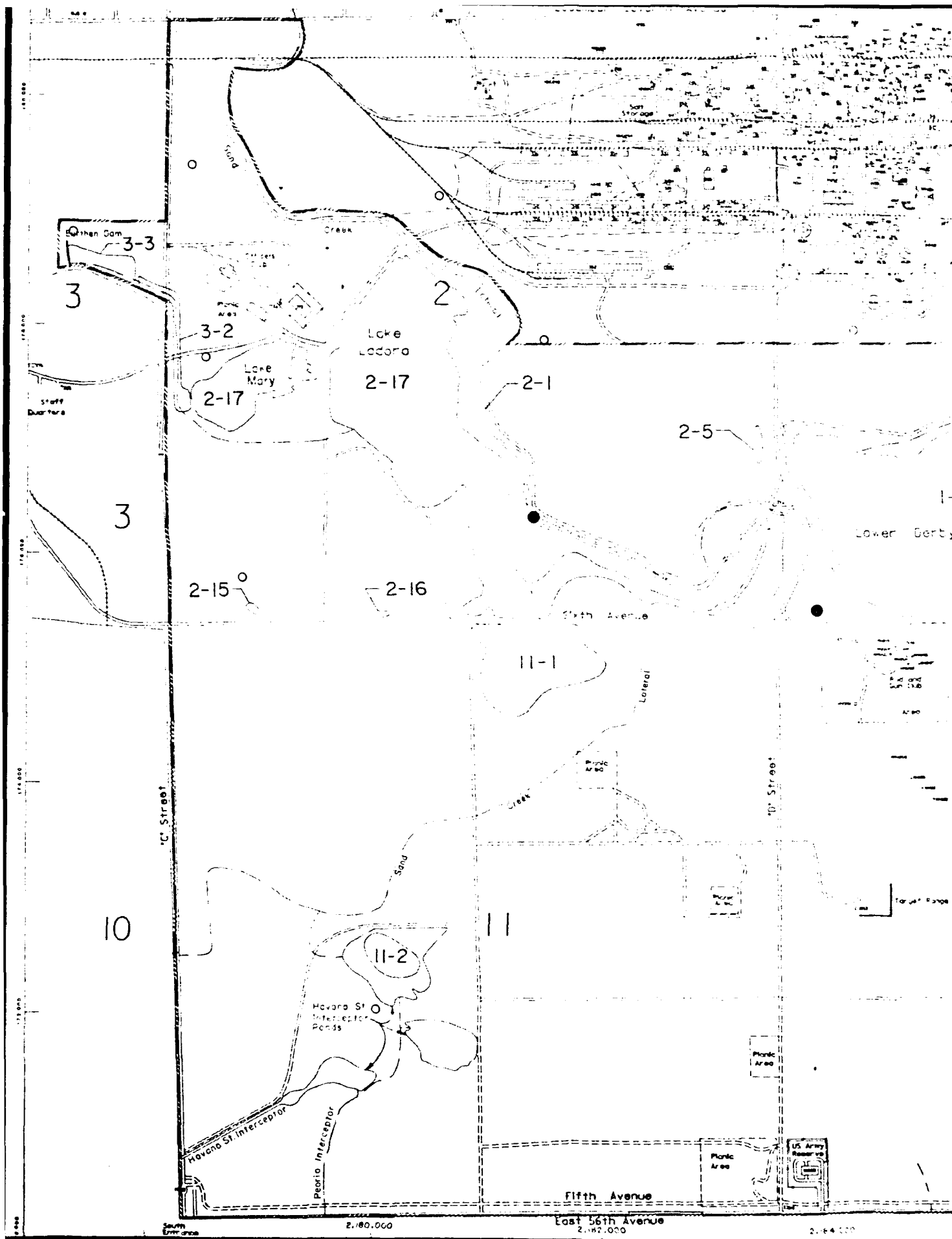
1" = 5 MILES

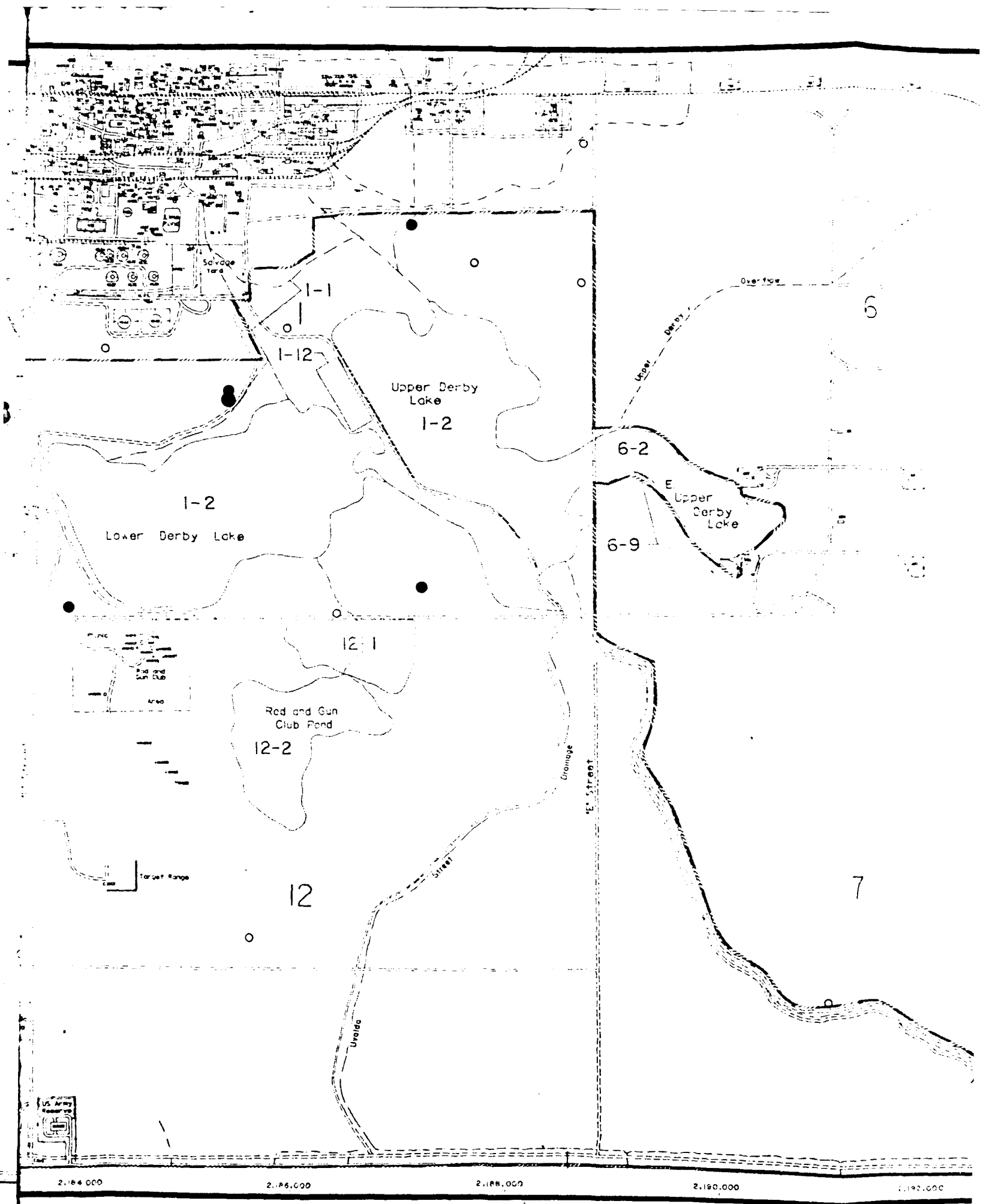


Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-10
Organochlorine Pesticides
in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





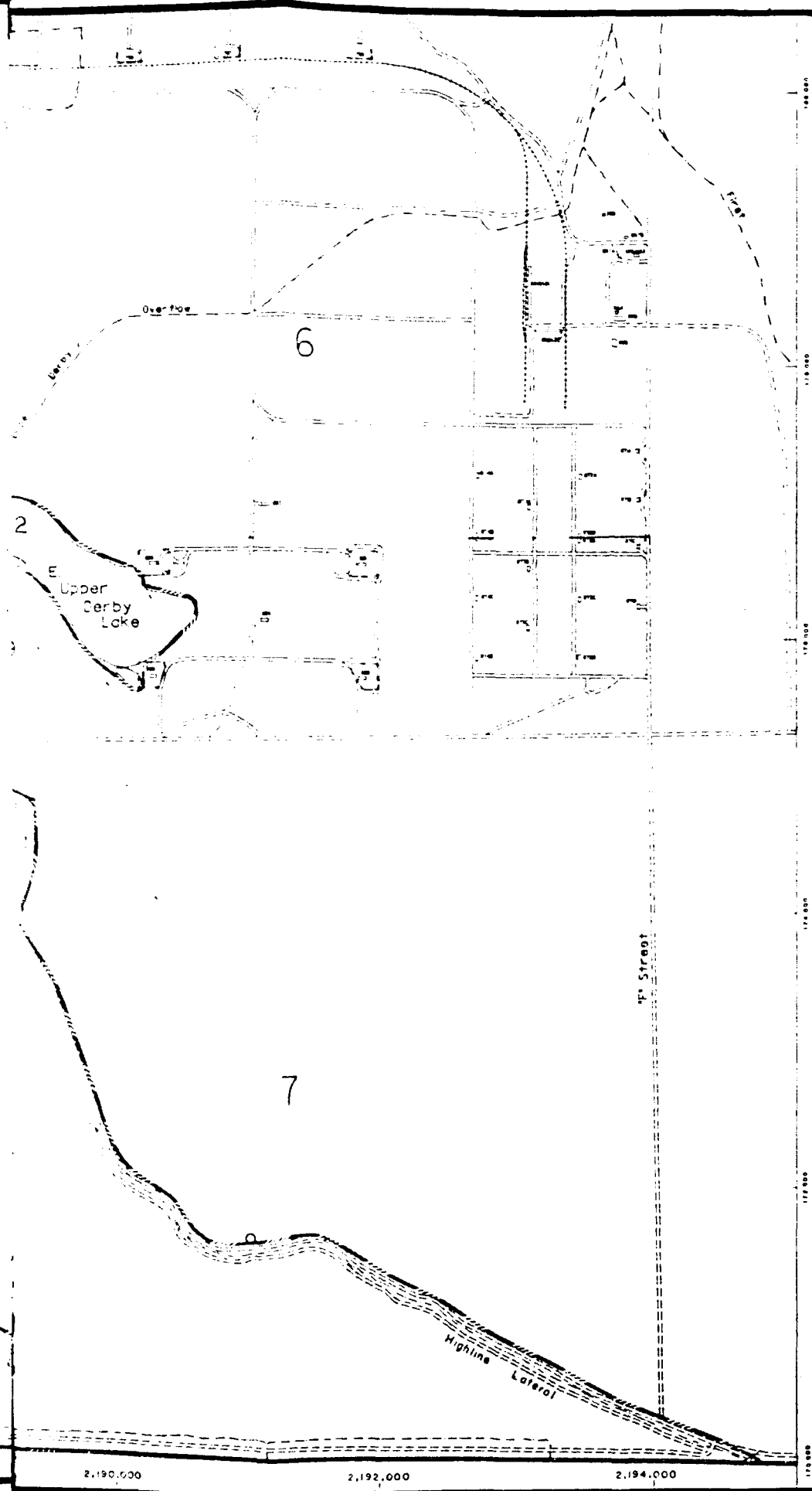
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

- Improved Road
- - - Unimproved Road
- +— Railroad Tracks
- Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

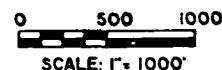
- BCRL*
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN LATERAL LOCATION



1" = 5 MILES



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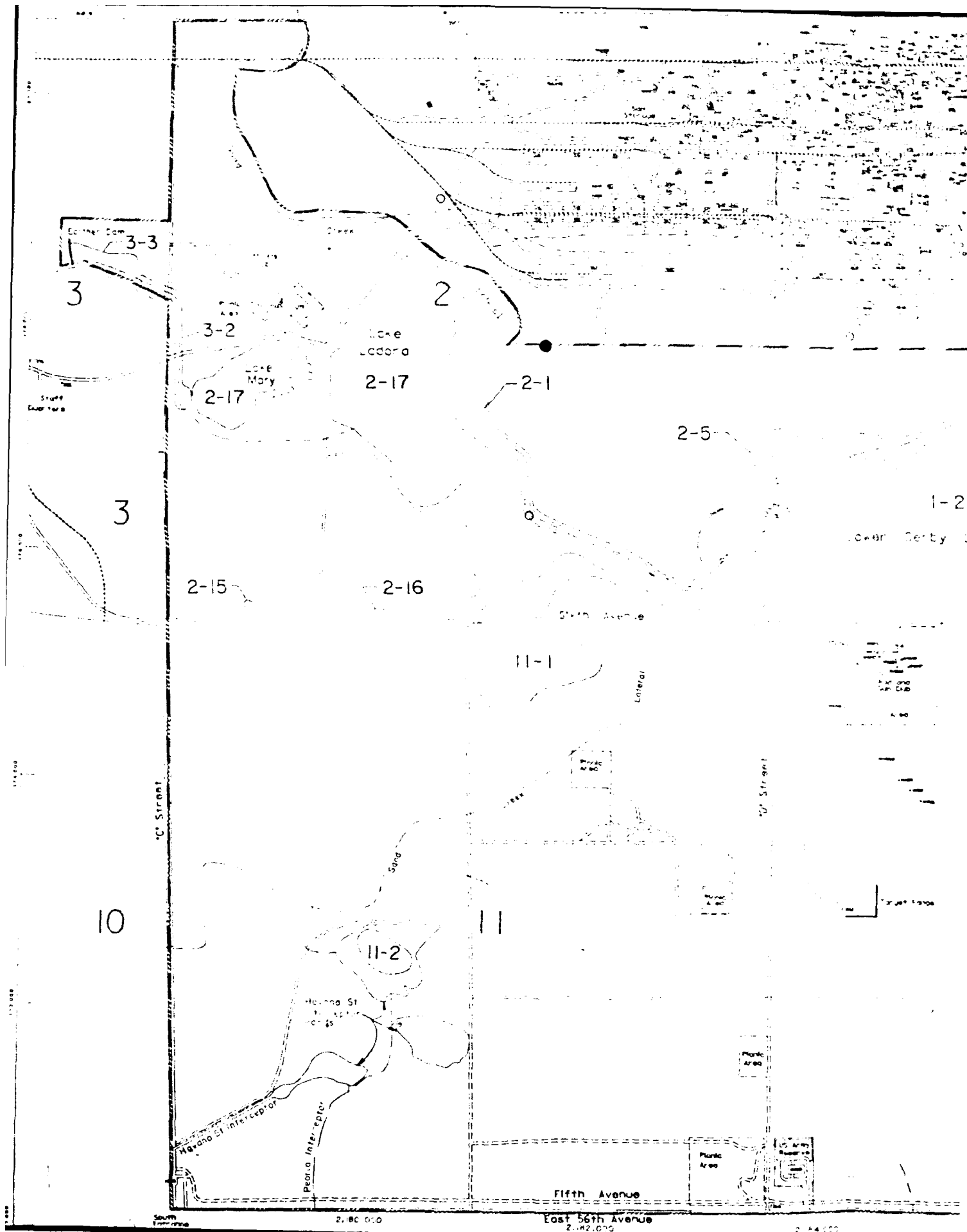
FIGURE: SSA 2.3-11

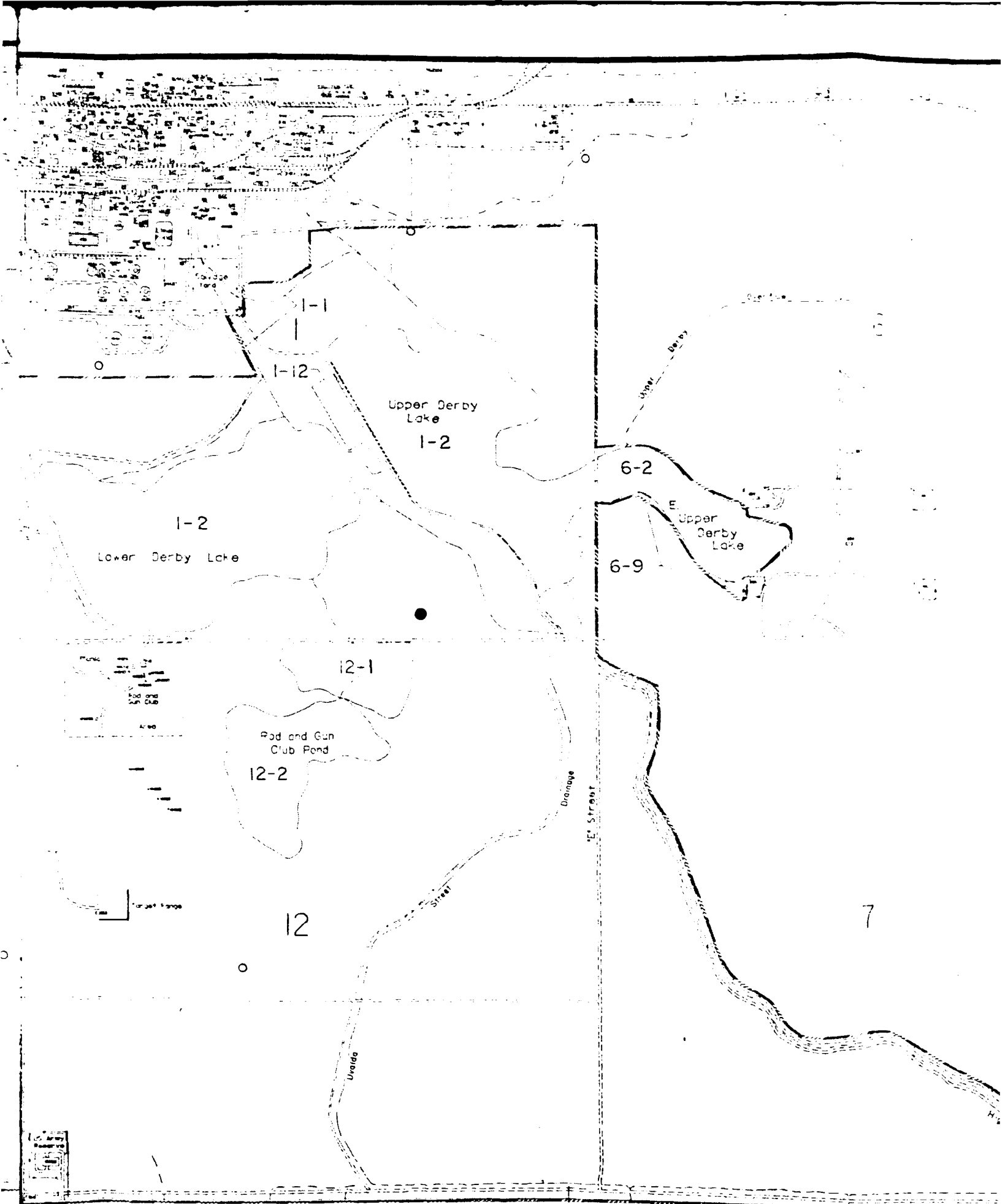
Arsenic
in Groundwater (WBZ 1A-1)

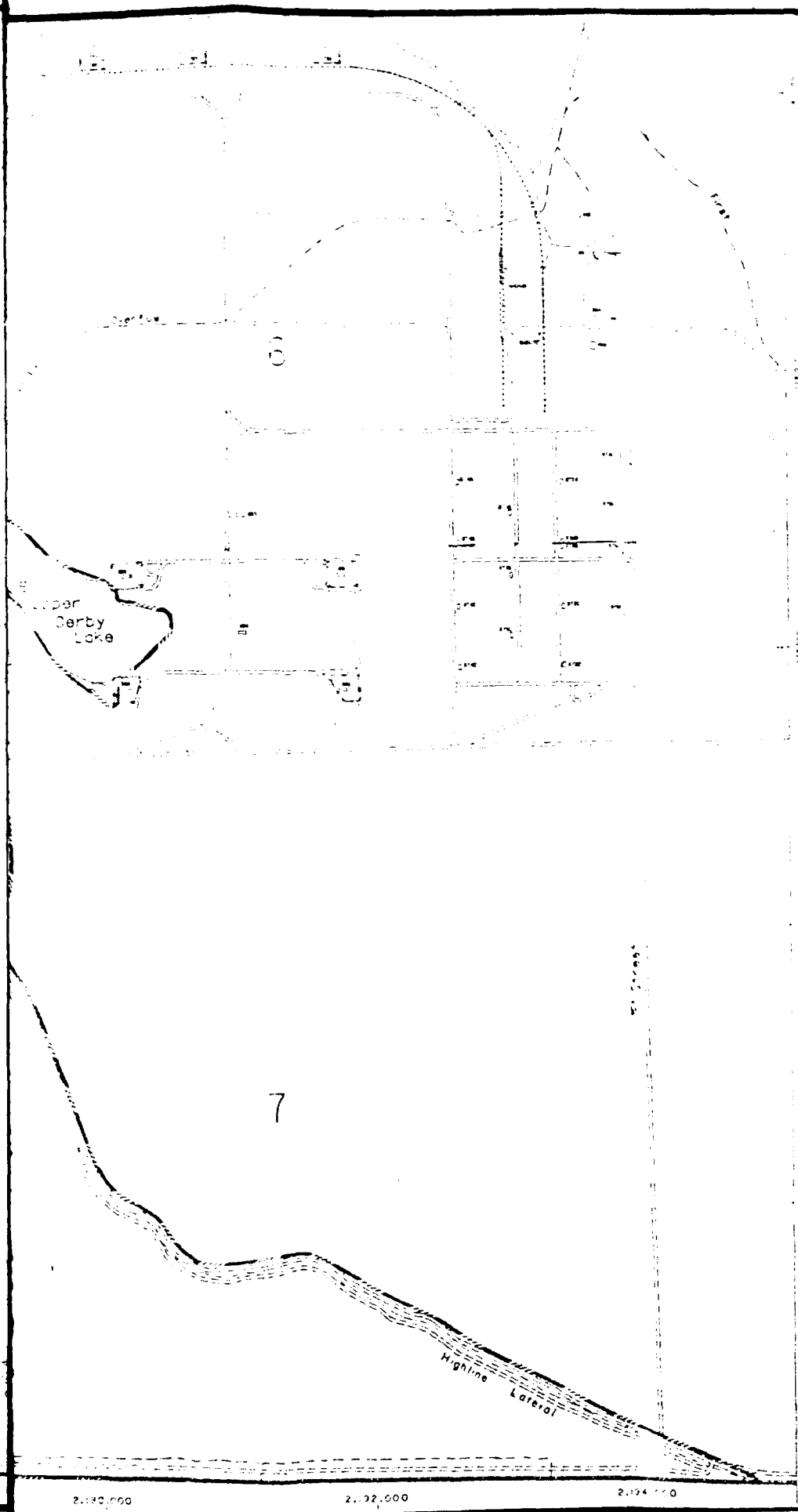
Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated







LEGEND

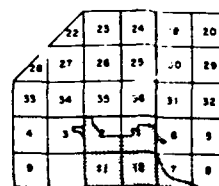
- Improved Road
- - - - - Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



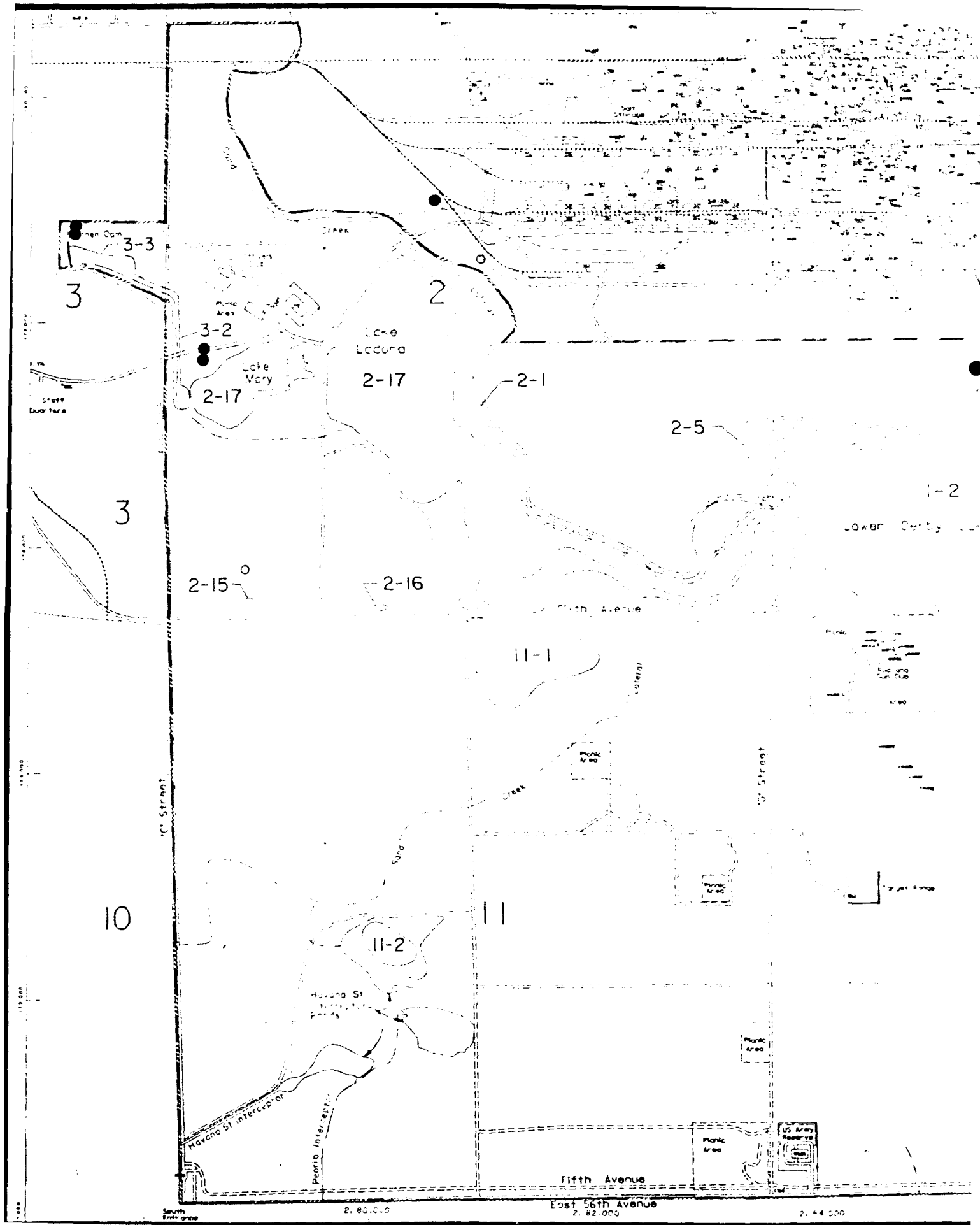
1" = 5 MILES

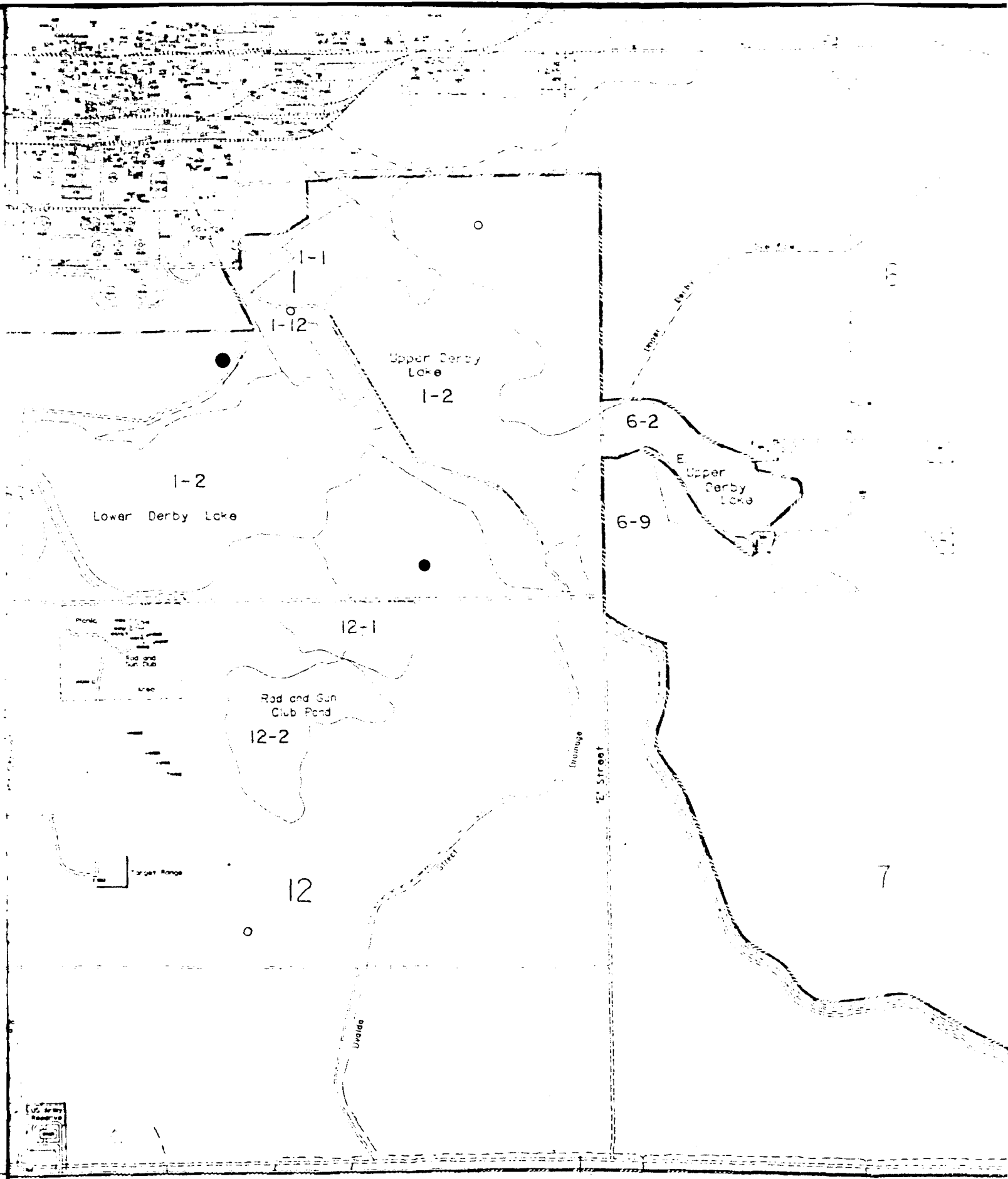
0 500 1000
SCALE: 1" = 1000'

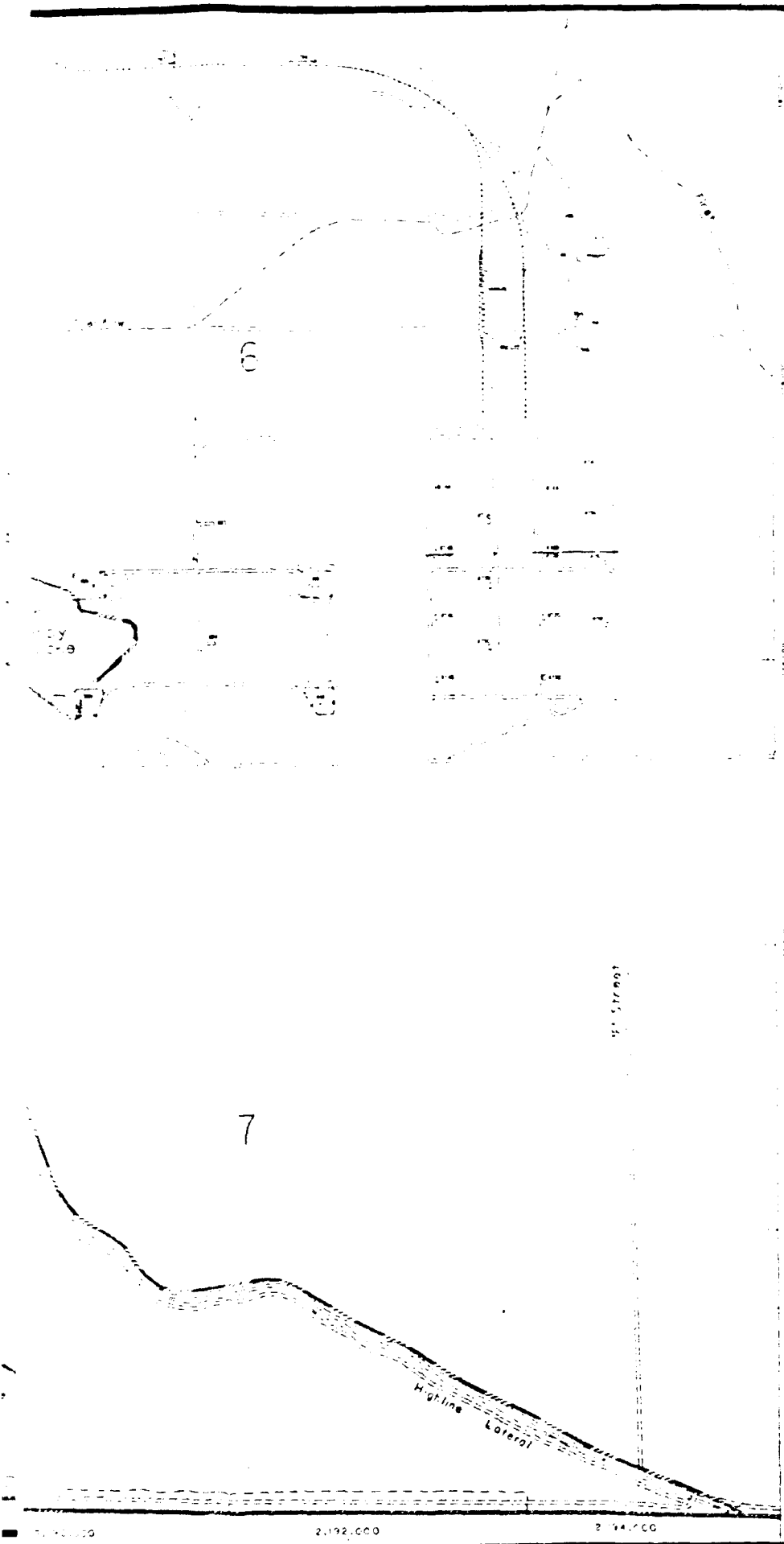
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 23-12
Arsenic
in Groundwater (WBZ 2)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

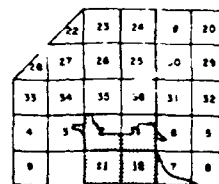
- Improved Road
- - - Unimproved Road
- - - Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6 Section Number
- - - Stream or Ditch
- - - Study Area Boundary
- 174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCR_L*
- 0-1.0
- >1.0-10
- >10-100
- >100-1,000
- >1,000-10,000
- >10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

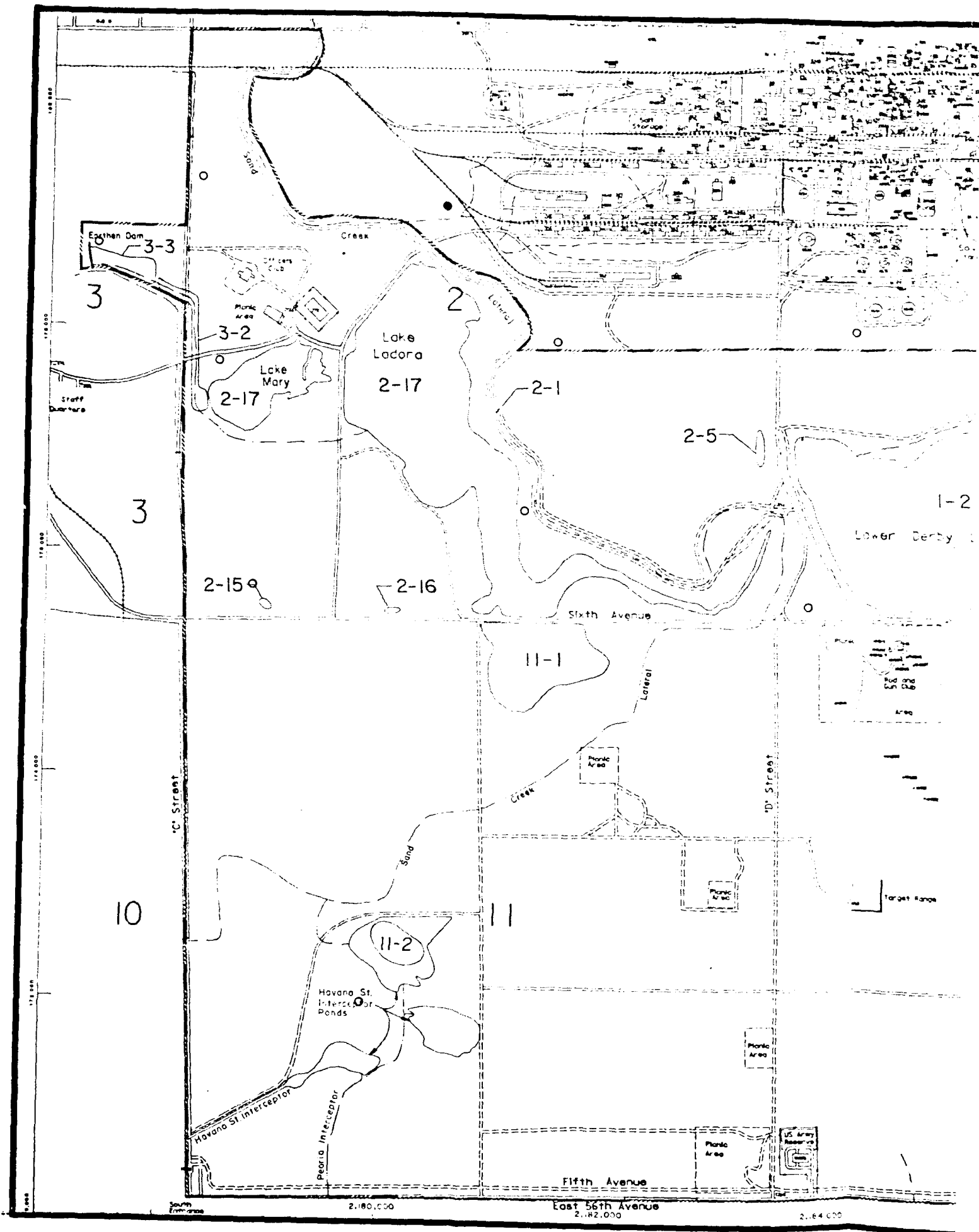
0 500 1000

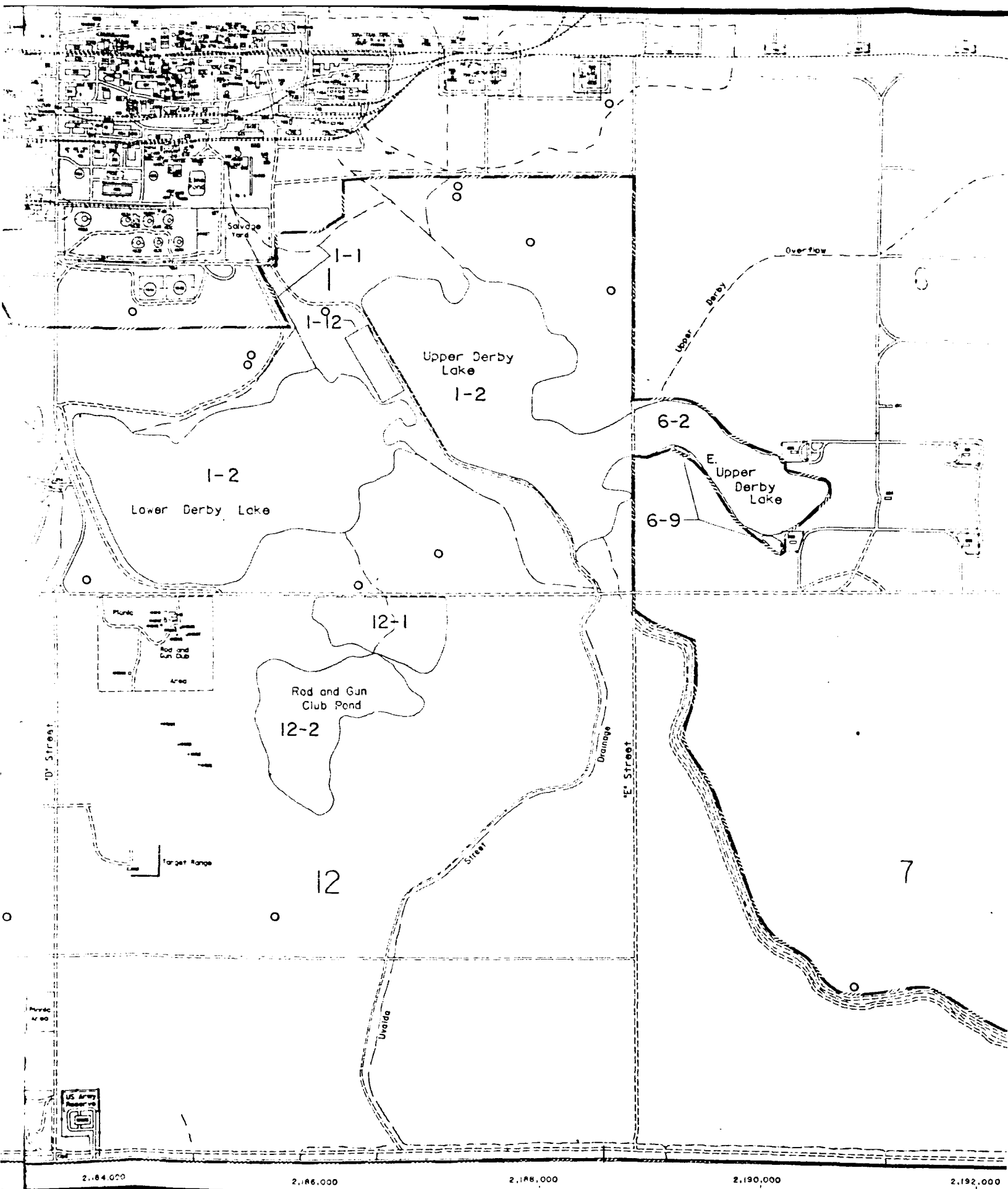
SCALE: 1" = 1000'

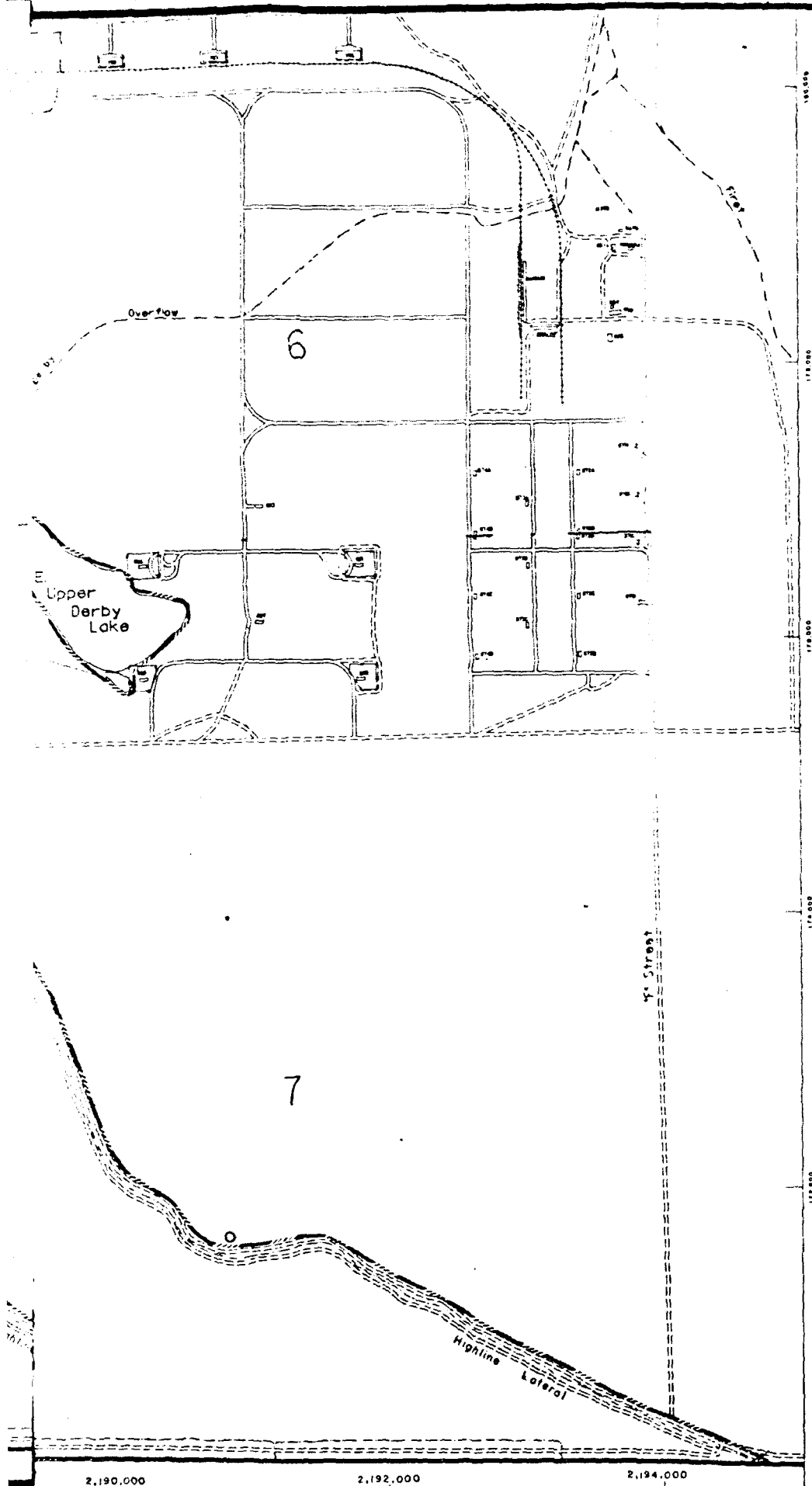
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-13
Arsenic
in Groundwater (WBZ 3-4)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

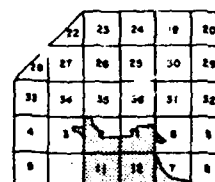
174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

- BCRL *
- 0-1.0
- > 1.0-10
- > 10-100
- > 100-1,000
- > 1,000-10,000
- > 10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

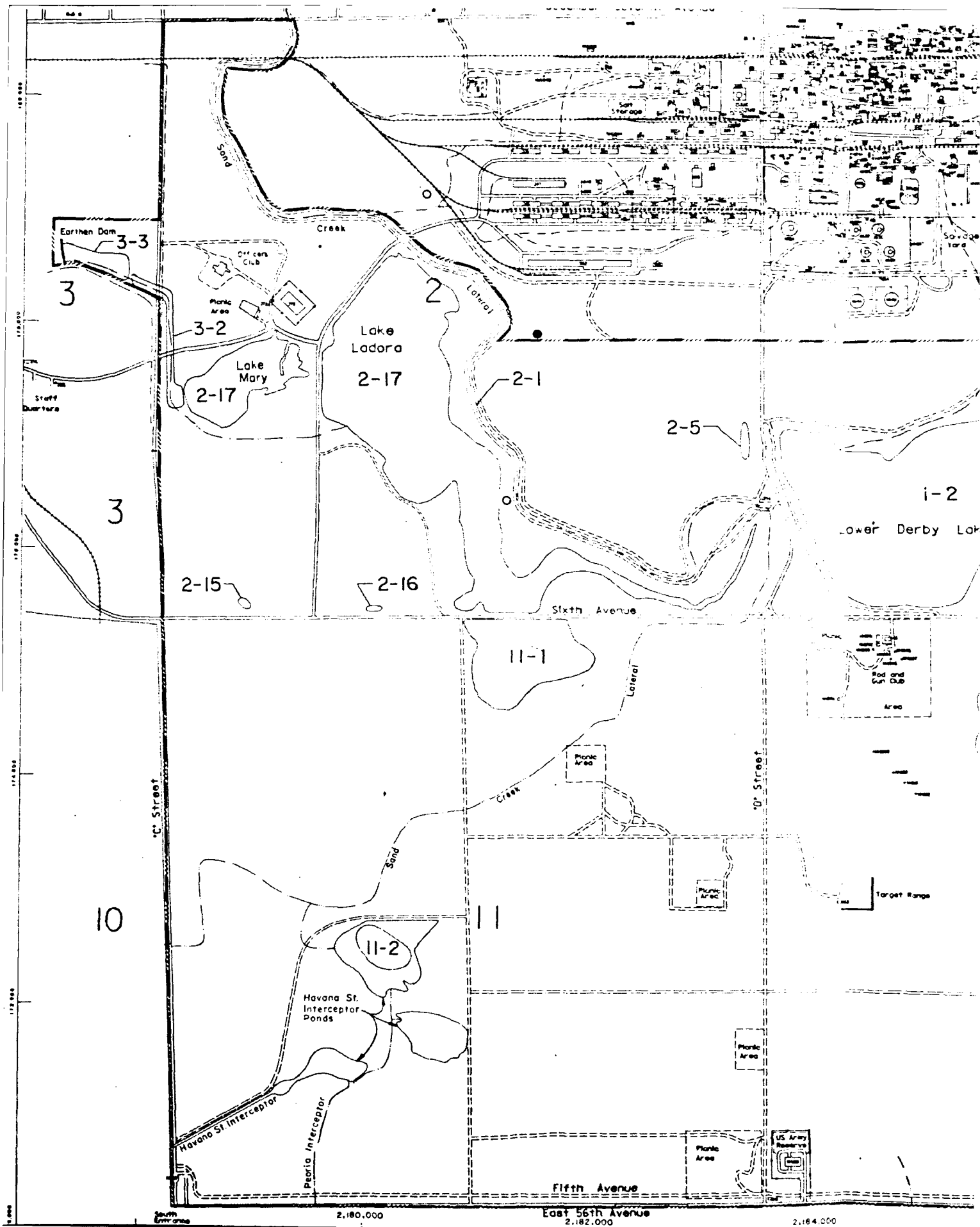
FIGURE: SSA 2.3-14

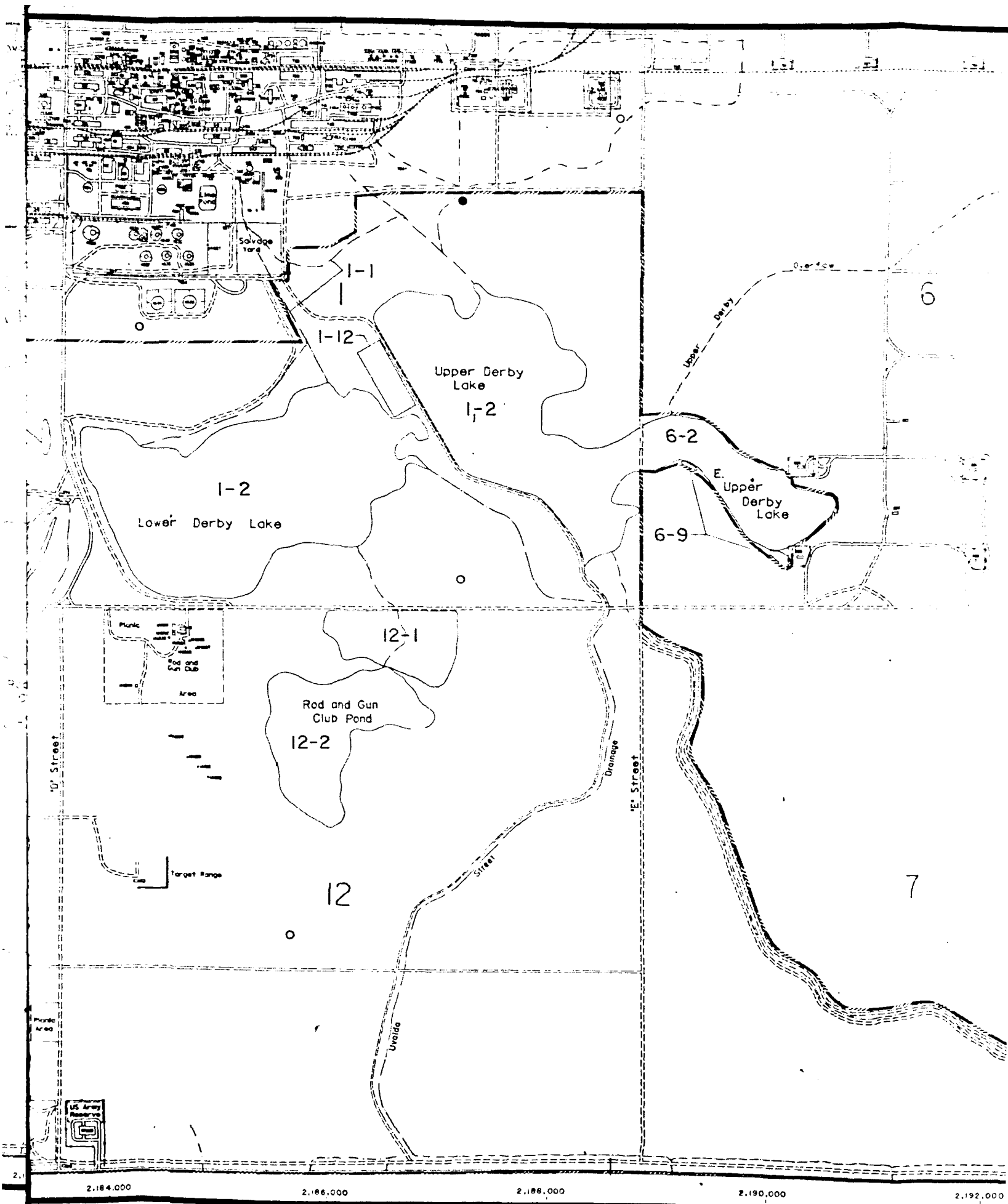
Mercury in Groundwater (WBZ 1A-1)

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated





LEGEND

Superfund Site

Interpretive Road

Stationed Road

Tracing Structure

Storage Structure

Valley

Facility Boundary

Stream or River

Study Area Boundary

1:500 Scale Ratio and

1:500 Scale Ratio and
1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

1:500 Scale Ratio and

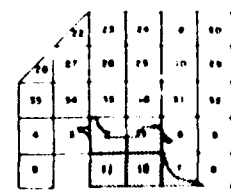
1:500 Scale Ratio and

1:500 Scale Ratio and

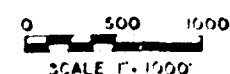
1:500 Scale Ratio and

Below Certified Reporting
Limits (CERCLA)

ROCKY MOUNTAIN ARSENAL LOCATION



1:500 Scale



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Rocky Mountain Arsenal Cleanup

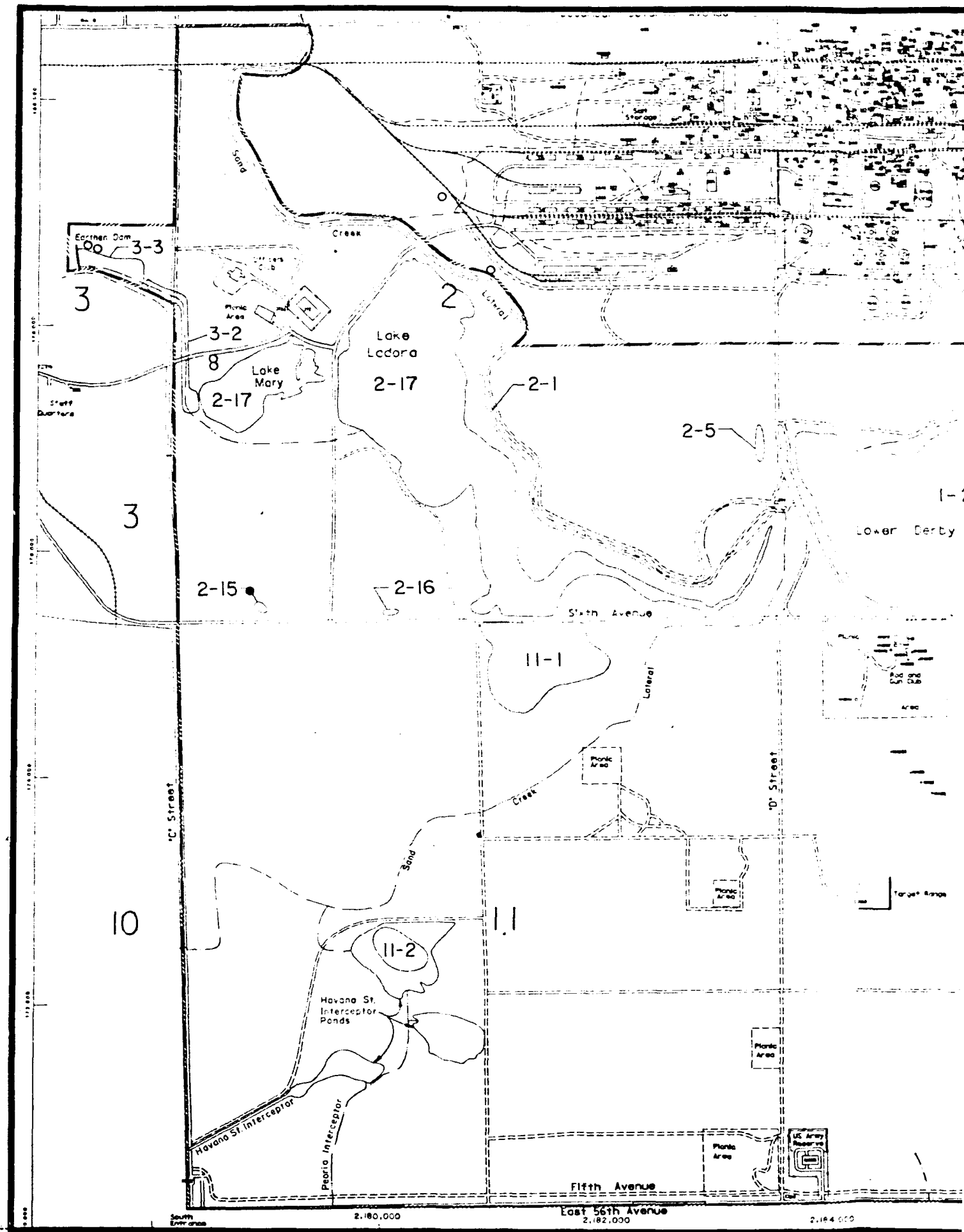
FIGURE: SCA 2-3-15

Version: 1.0 (September 1997)

Rocky Mountain Arsenal

Prepared by:

Edgco Services Incorporated



Earth Dam
3-3

3

Soda

Creek

Picnic Area

3-2

8

Lake Mary

2-17

Lake Ladora

2-17

2

2-1

2-5

3

2-15

2-16

Sixth Avenue

11-1

Lateral

Picnic Area

Creek

Soda

D Street

Picnic Area

Target Range

10

11

11-2

Havana St. Interceptor Ponds

Havana St. Interceptor

Pearla Interceptor

Picnic Area

Picnic Area

Army Reserve

Fifth Avenue

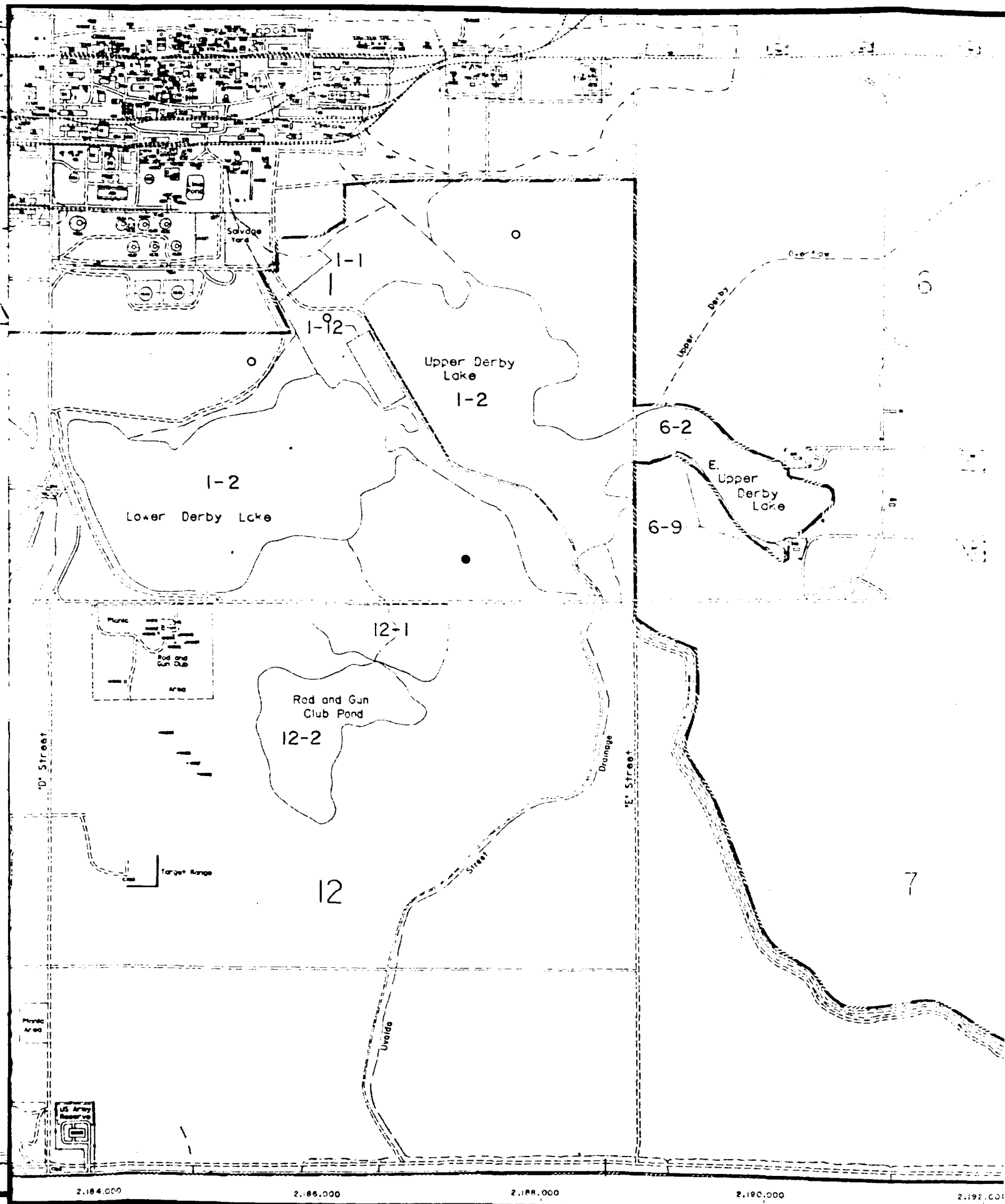
East 56th Avenue

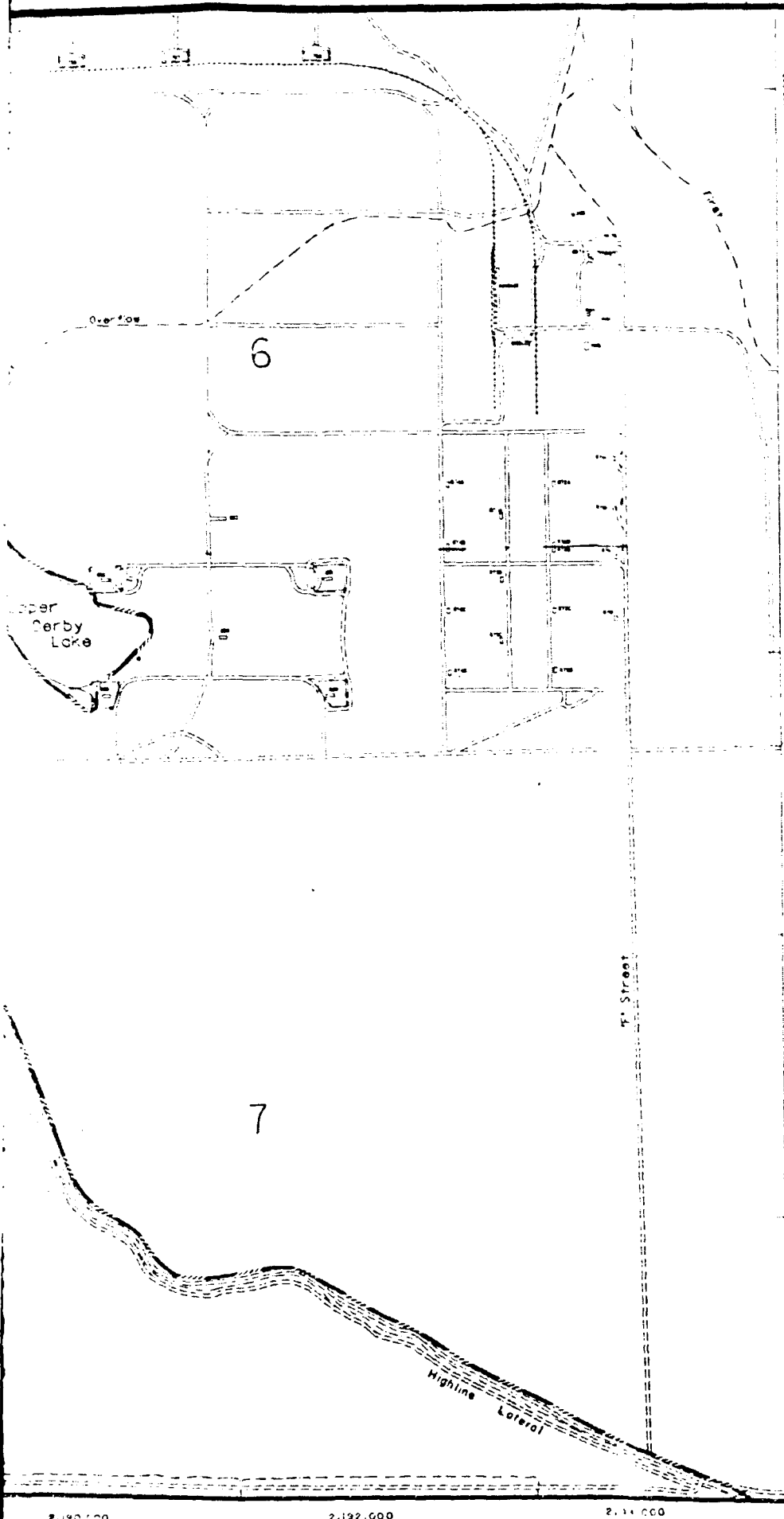
South Entrance

2,180,000

2,182,000

2,184,000





LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary

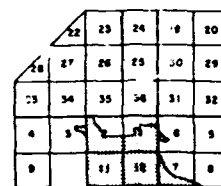
174,000 State Plane Grid

Analyte Sample Location and Concentration (ug/l)

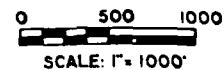
- BCRL *
- 0-1.0
- > 1.0-10
- > 10-100
- > 100-1,000
- > 1,000-10,000
- > 10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES



Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

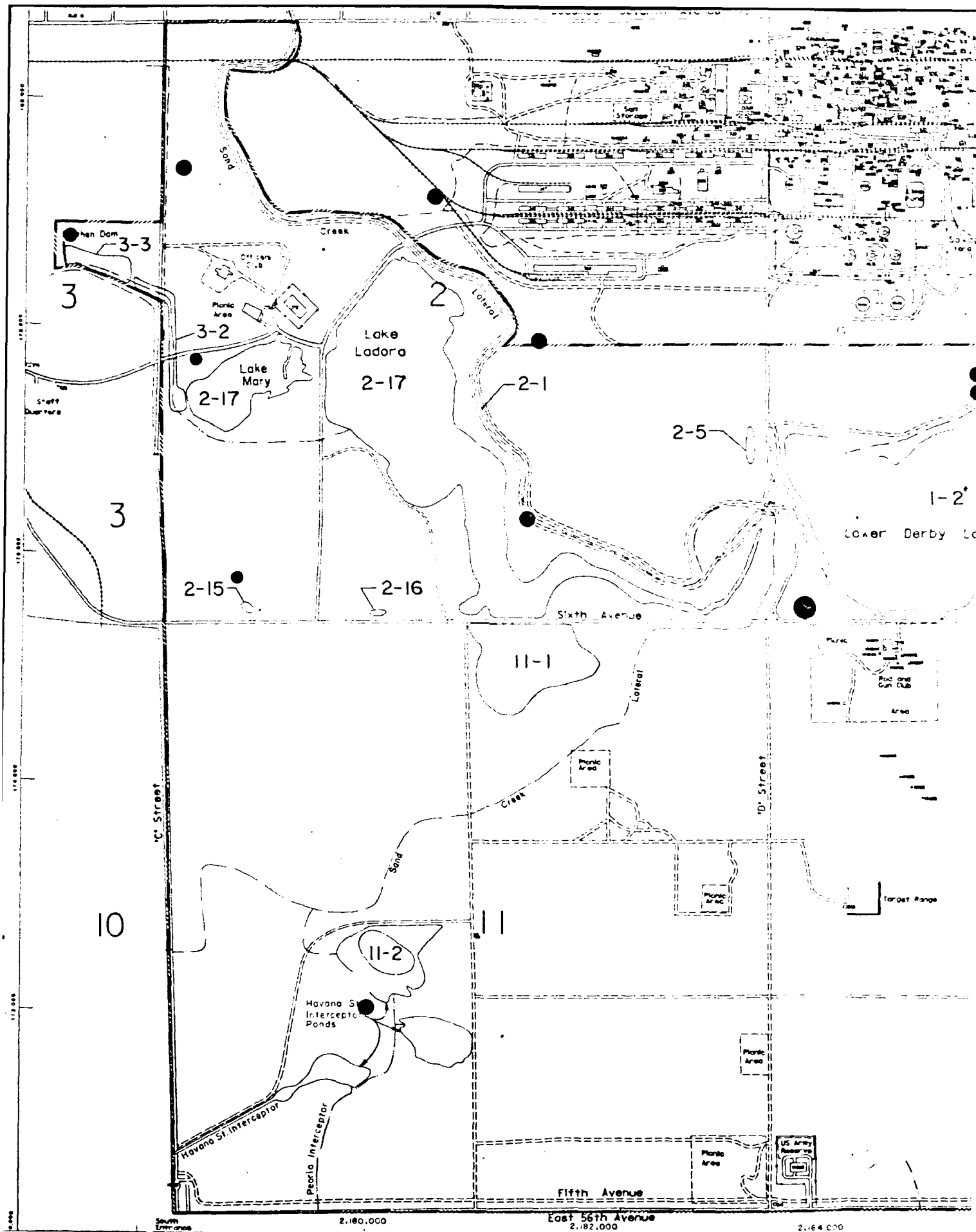
FIGURE: SSA 2.3-16

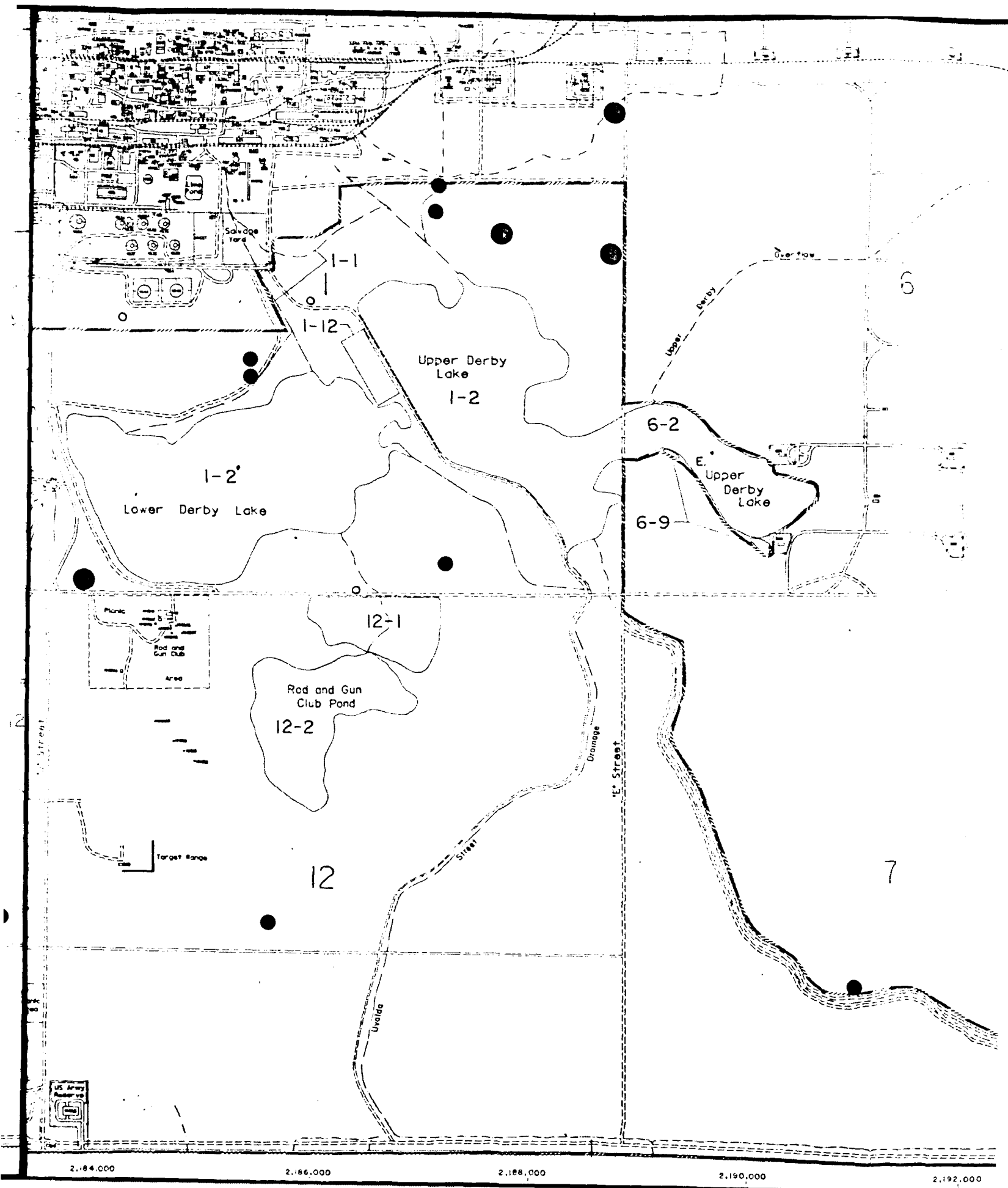
Mercury in Groundwater (WBZ 3 & 4)

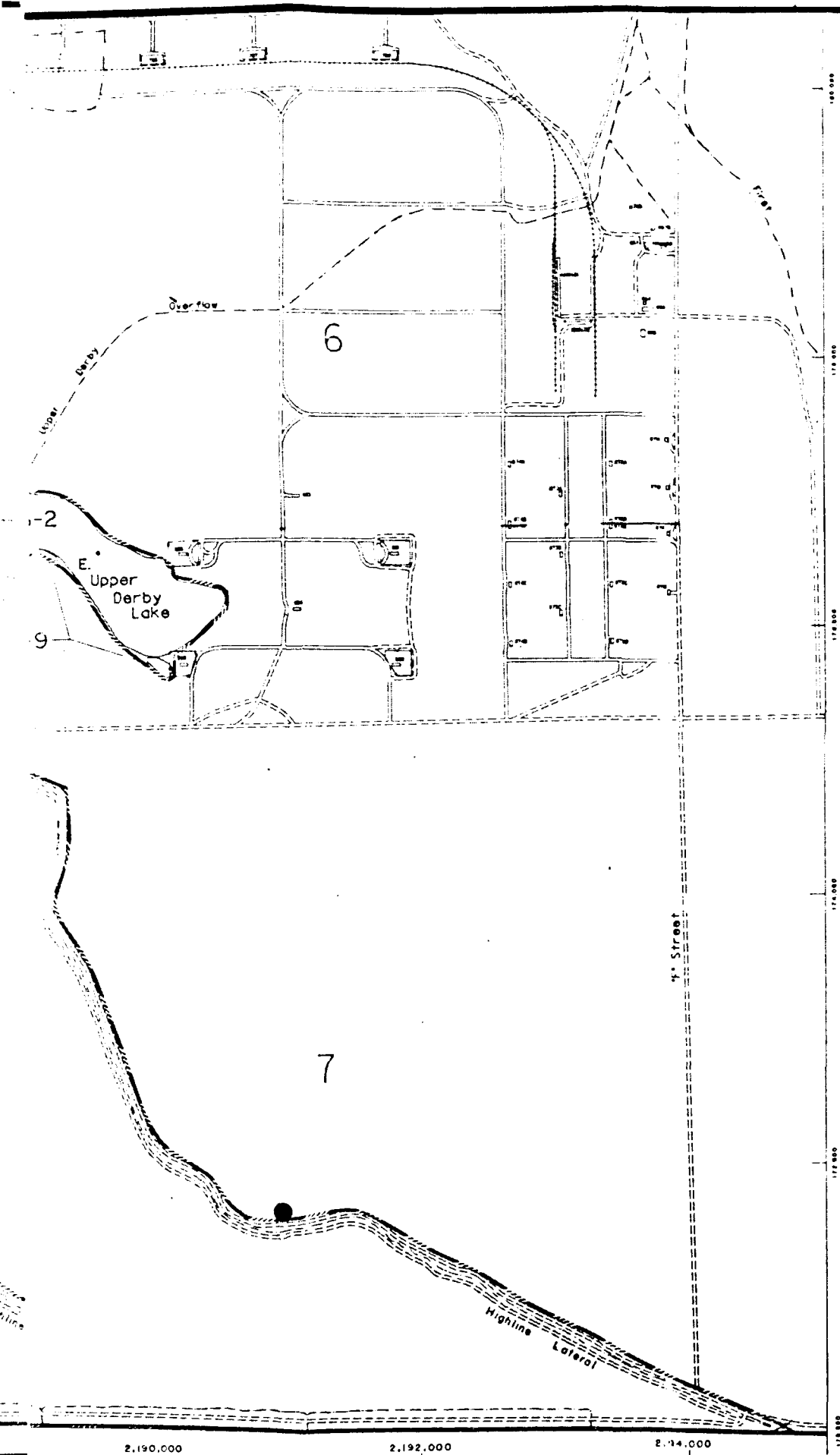
Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- Railroad Tracks
- Existing Structure
- - - Former Structure
- Fence
- 6** Section Number
- - - Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

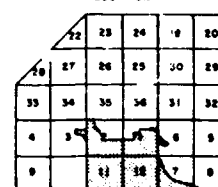
ICP Metals Include Zn, Cu, Cr, Cd, Pb

Analyte Sample Location and Concentration (ug/l)

- BCRL*
- 0-1.0
- > 1.0-10
- > 10-100
- > 100-1,000
- > 1,000-10,000
- > 10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL
LOCATION

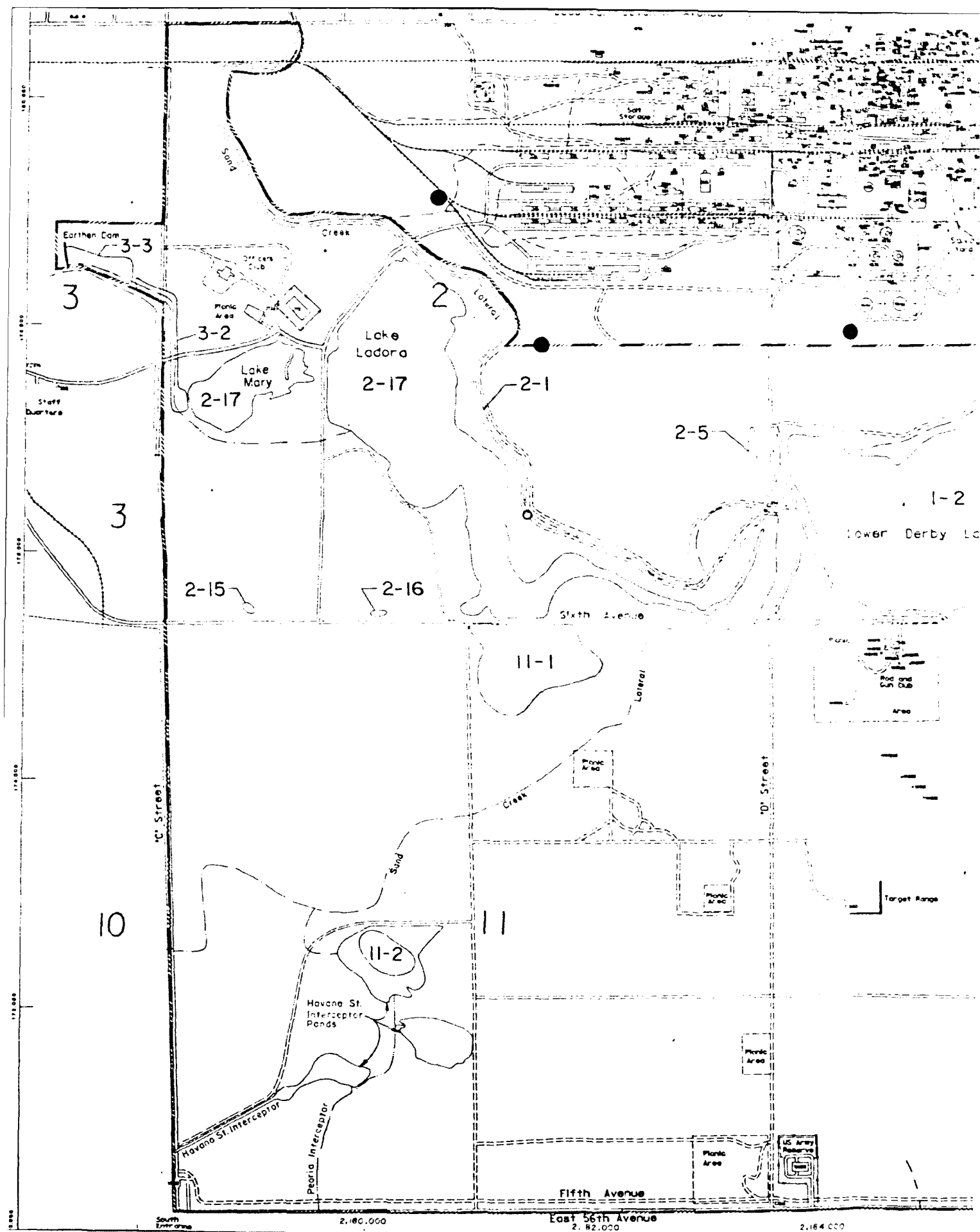


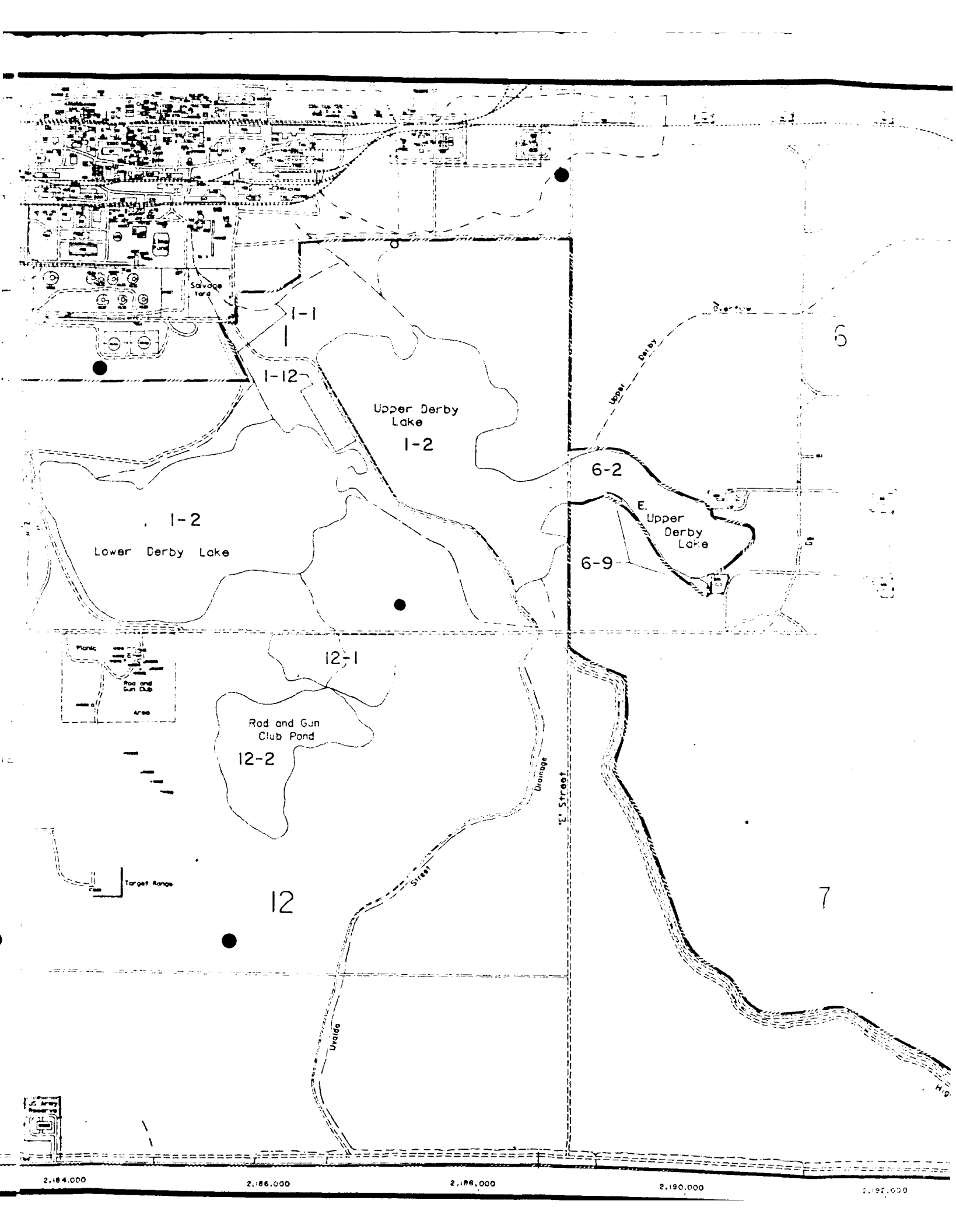
0 500 1000
SCALE: 1" = 1000'

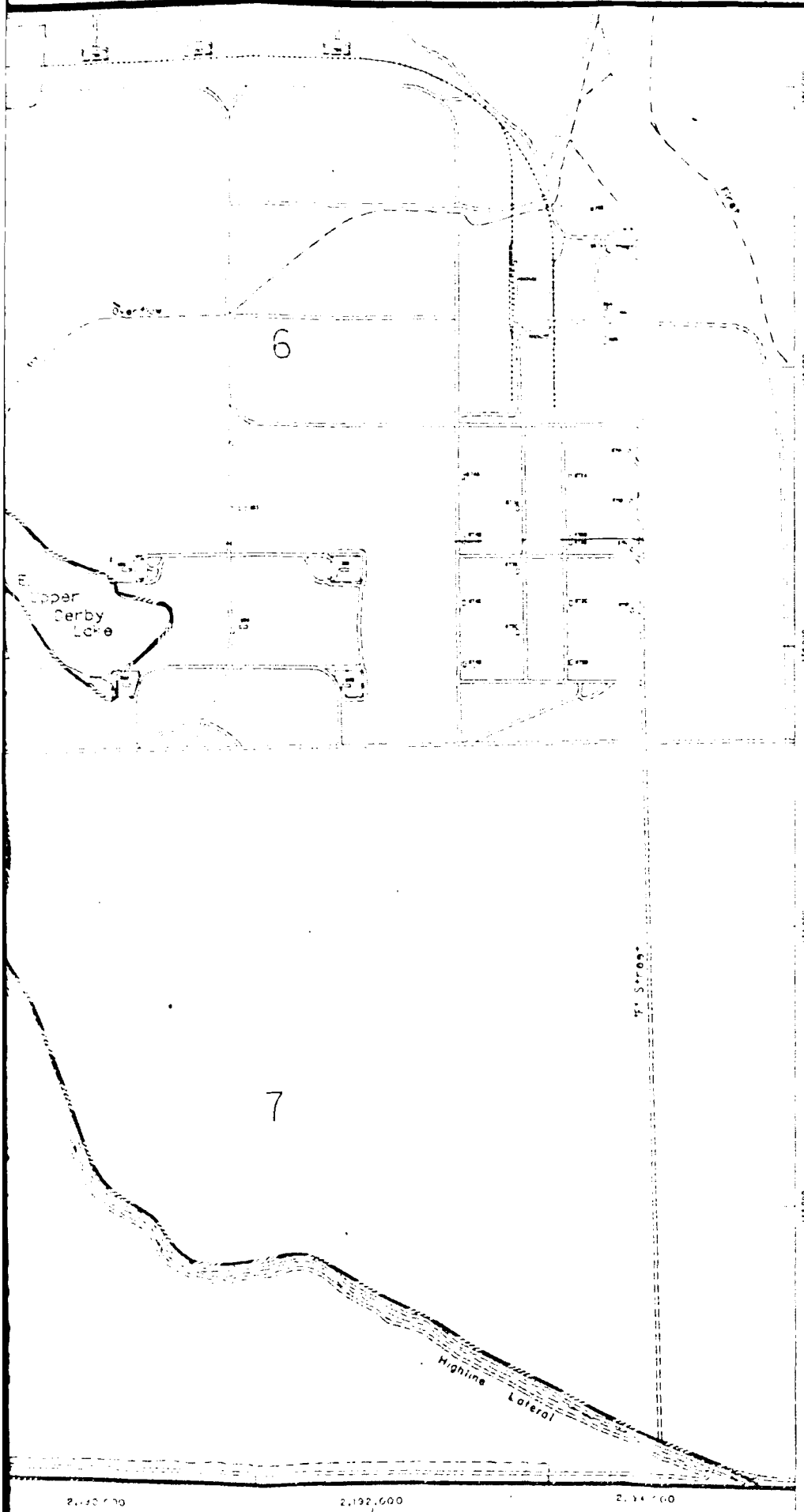
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-17
ICP Metals
in Groundwater (WBZ 1A-1)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated

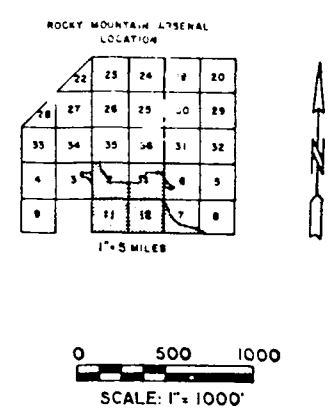






- LEGEND**
- Improved Road
 - - - Unimproved Road
 - +— Railroad Tracks
 - - - Existing Structure
 - - - Former Structure
 - - - Fence
 - 6 Section Number
 - / - Stream or Ditch
 - - - Study Area Boundary
- 174,000 State Plane Grid
- ICP Metals Include Zn, Cu, Cr, Cd, Pb

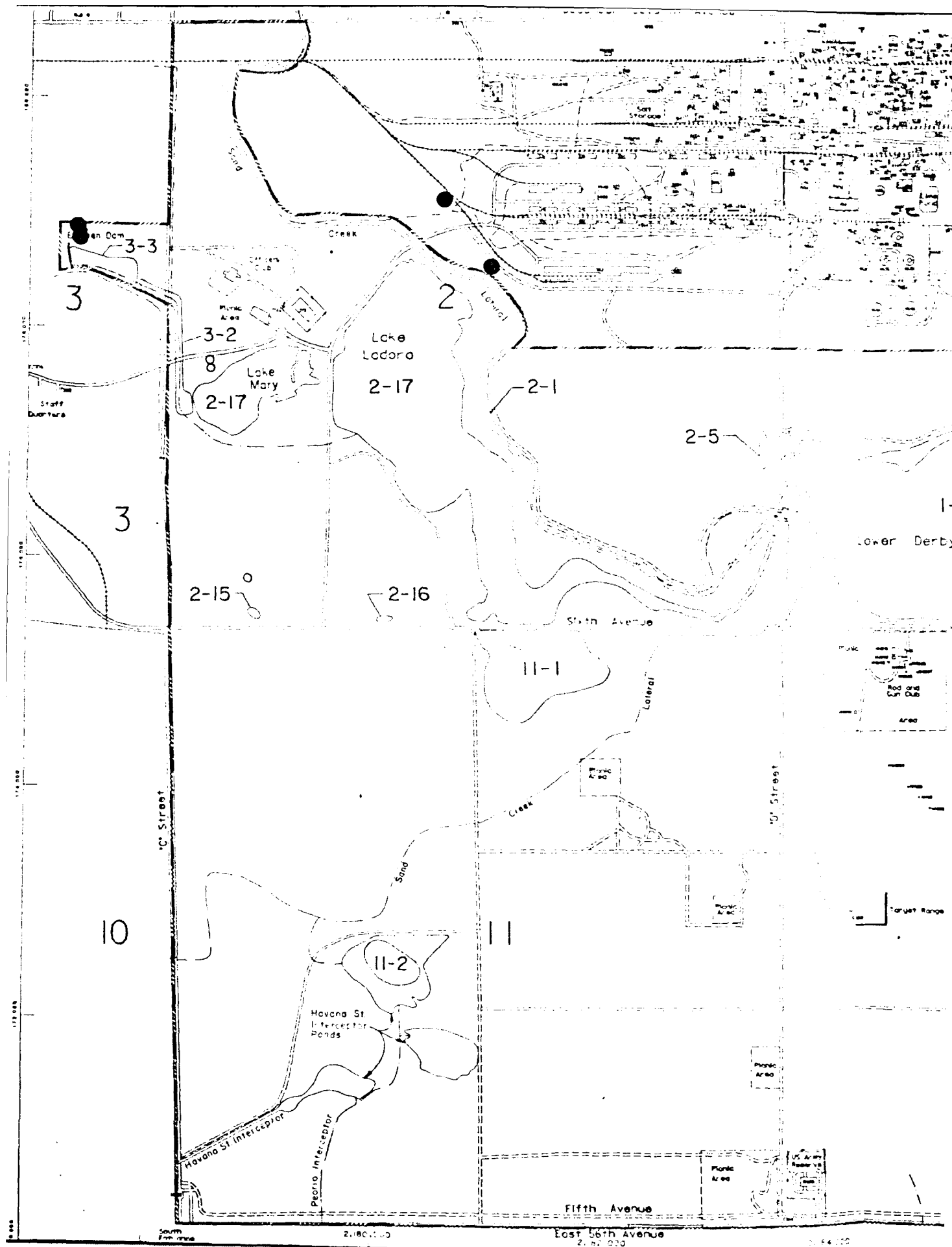
- Analyte Sample Location and Concentration (ug/l)
- BCRL *
 - 0-1.0
 - >1.0-10
 - >10-100
 - >100-1,000
 - >1,000-10,000
 - >10,000
- * Below Certified Reporting Limits (BCRL)

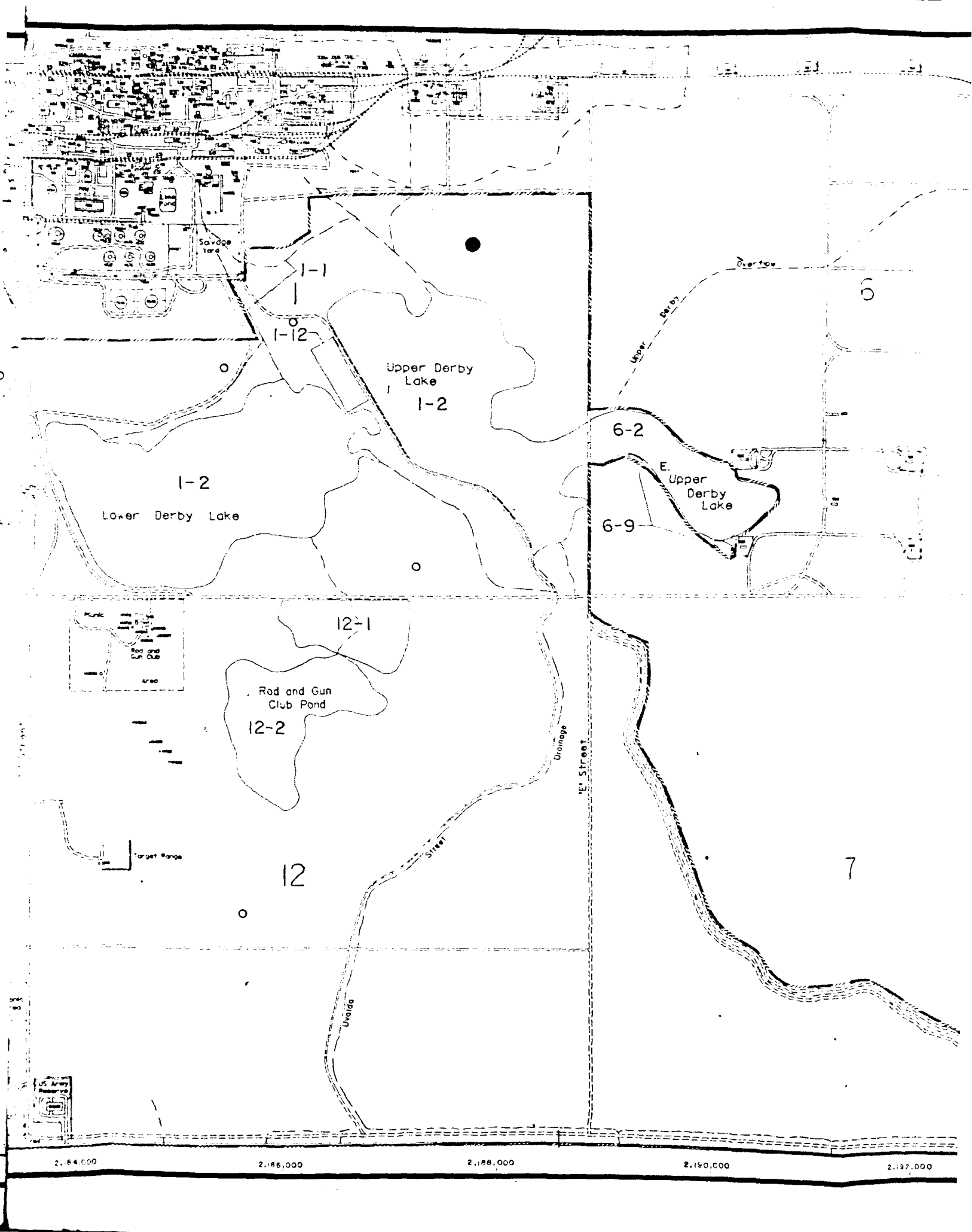


Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-18
ICP Metals
In Groundwater (WBZ 2)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





1-2
Lower Derby Lake

Upper Derby Lake
1-2

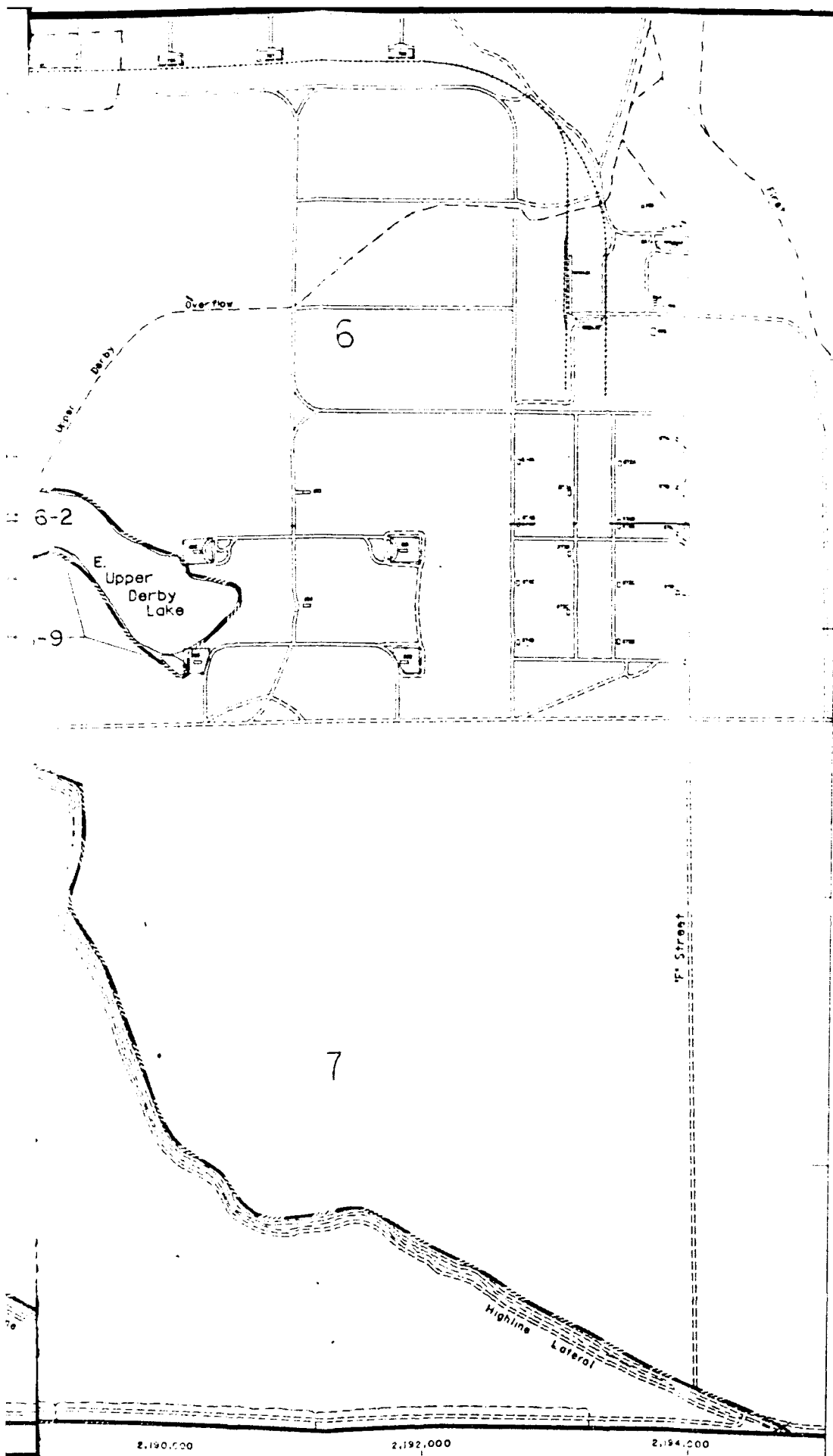
6-2

E. Upper Derby Lake
6-9

12-1
Rod and Gun Club Pond
12-2

12

7



LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

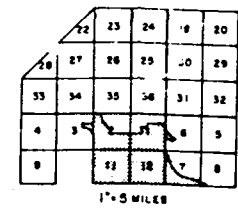
174,000 State Plane Grid
ICP Metals Include Zn, Cu, Cr, Cd, Pb

Analyte Sample Location and Concentration (ug/l)

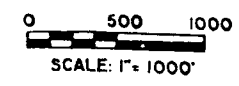
- BCRL *
- 0-1.0
- > 1.0-10
- > 10-100
- > 100-1,000
- > 1,000-10,000
- > 10,000

* Below Certified Reporting Limits (BCRL)

ROCKY MOUNTAIN ARSENAL LOCATION

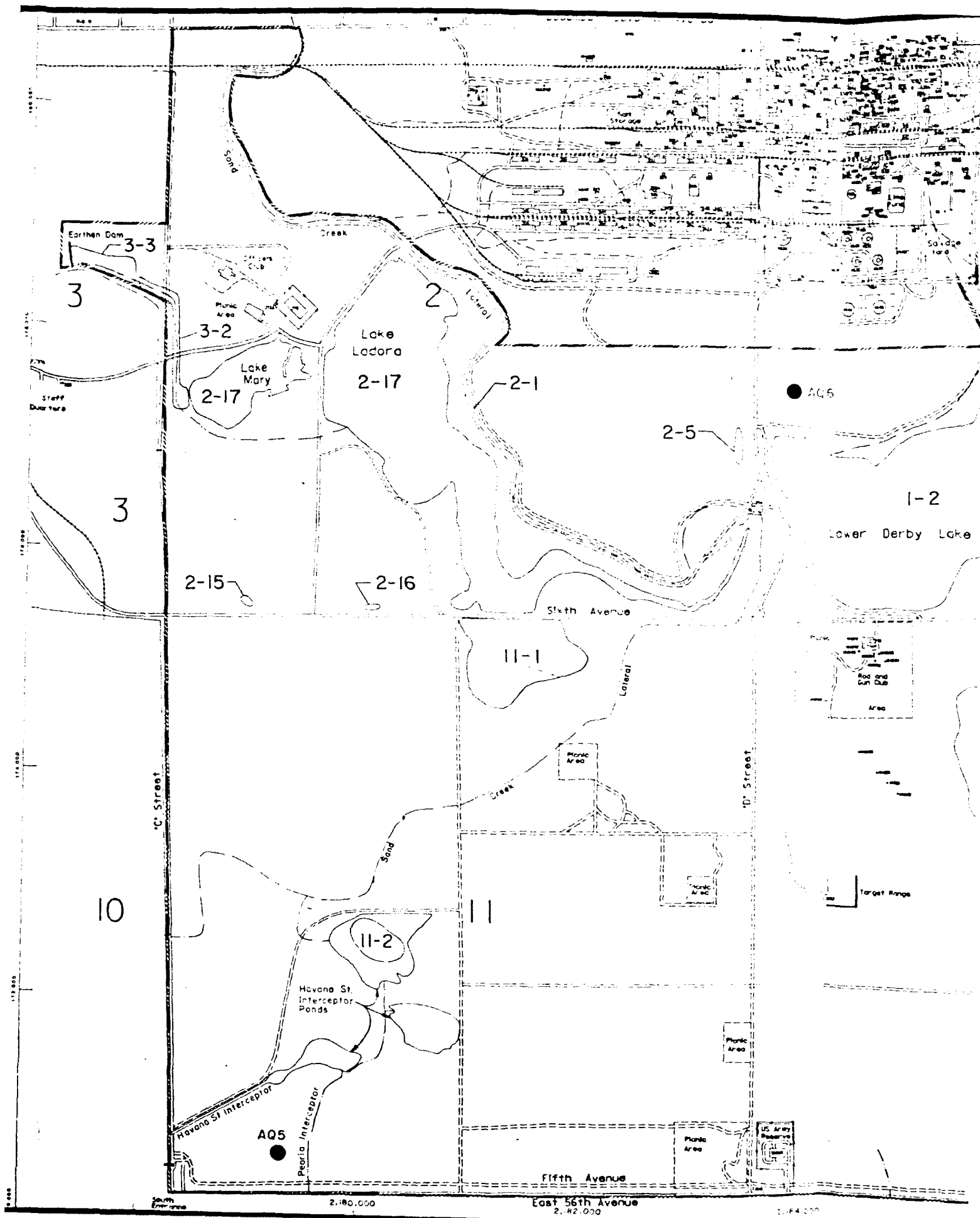


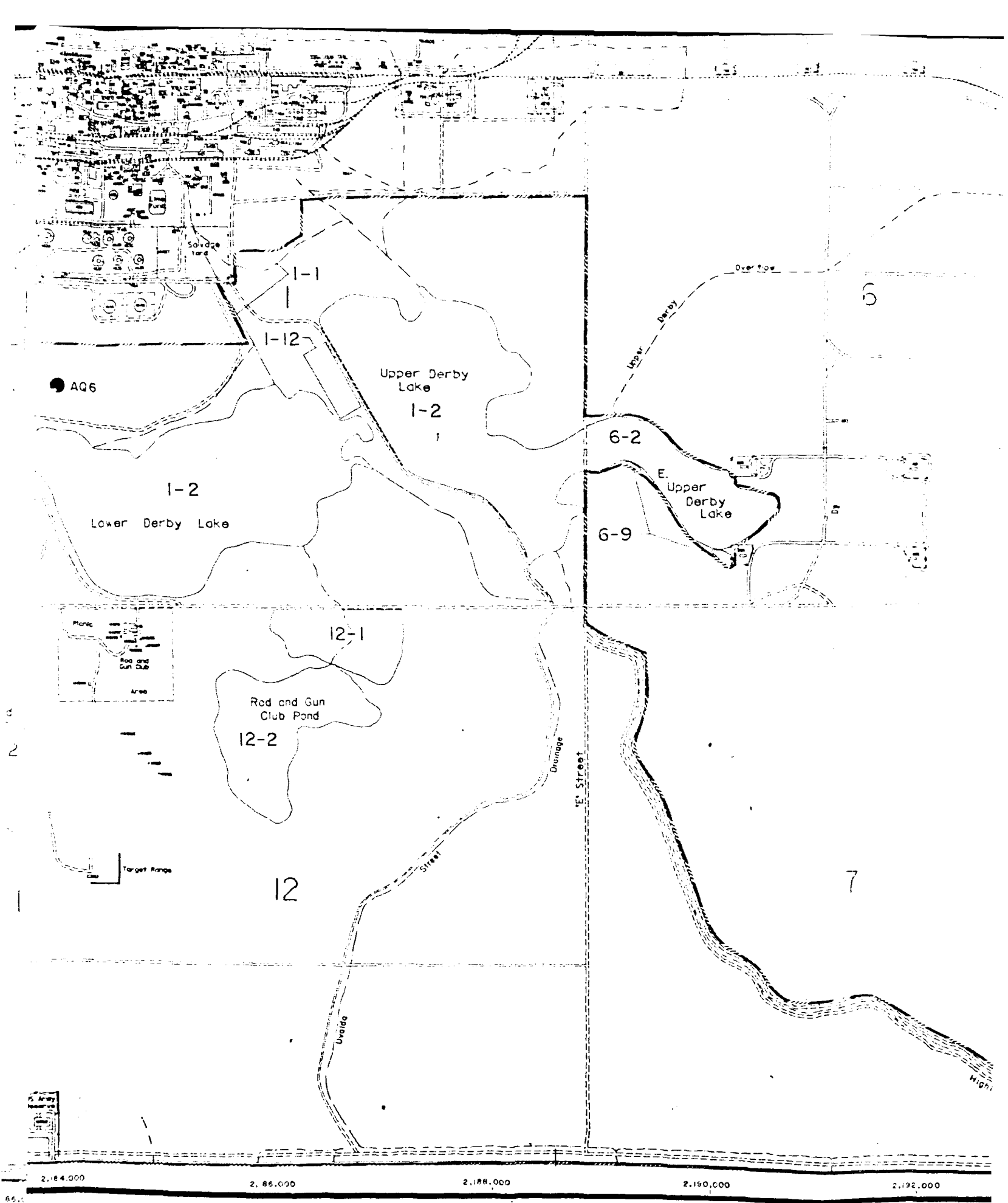
1"=5 MILES



Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.3-19
ICP Metals
in Groundwater (WBZ 3-4)
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





AQ6

1-2

Lower Derby Lake

Upper Derby Lake

1-2

6-2

E. Upper Derby Lake

6-9

12-1

Red and Gun Club Pond

12-2

12

Uvalde Street

Drainage

Highway

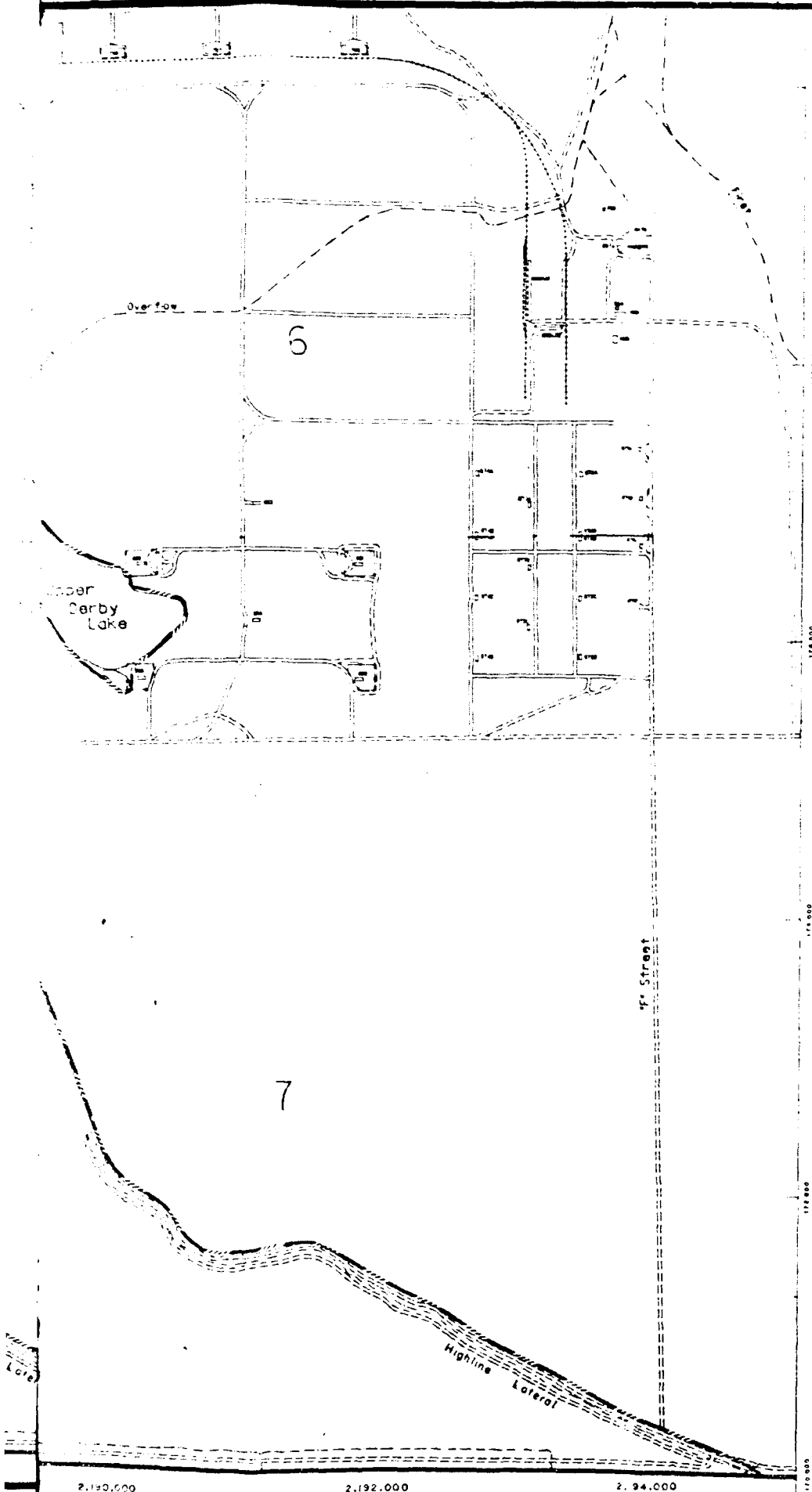
2,184,000

2,186,000

2,188,000

2,190,000

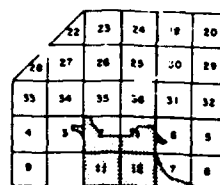
2,192,000



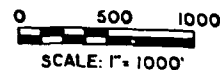
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid
- Air Quality Monitor Station

ROCKY MOUNTAIN ARSENAL LOCATION



1" = 5 MILES

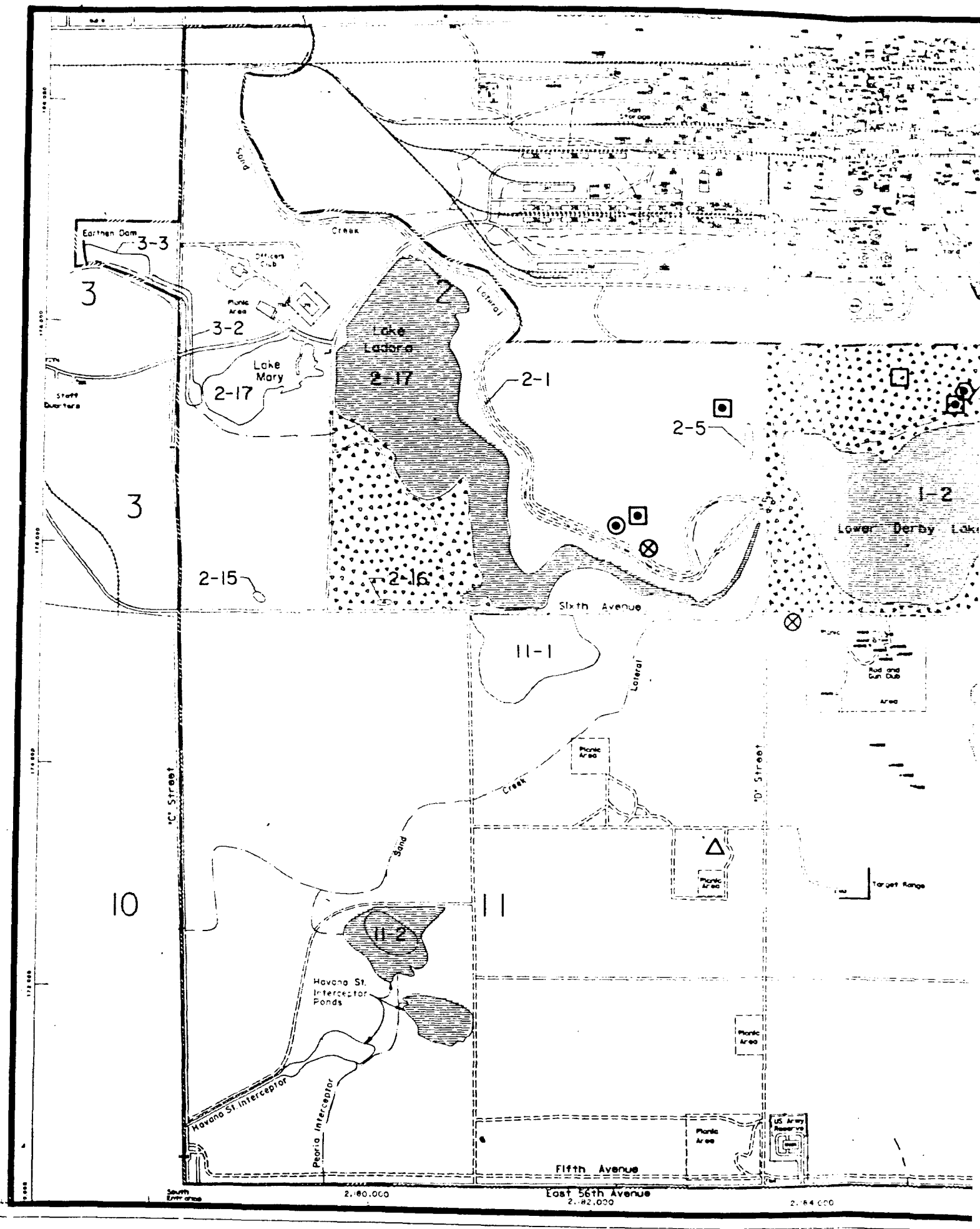


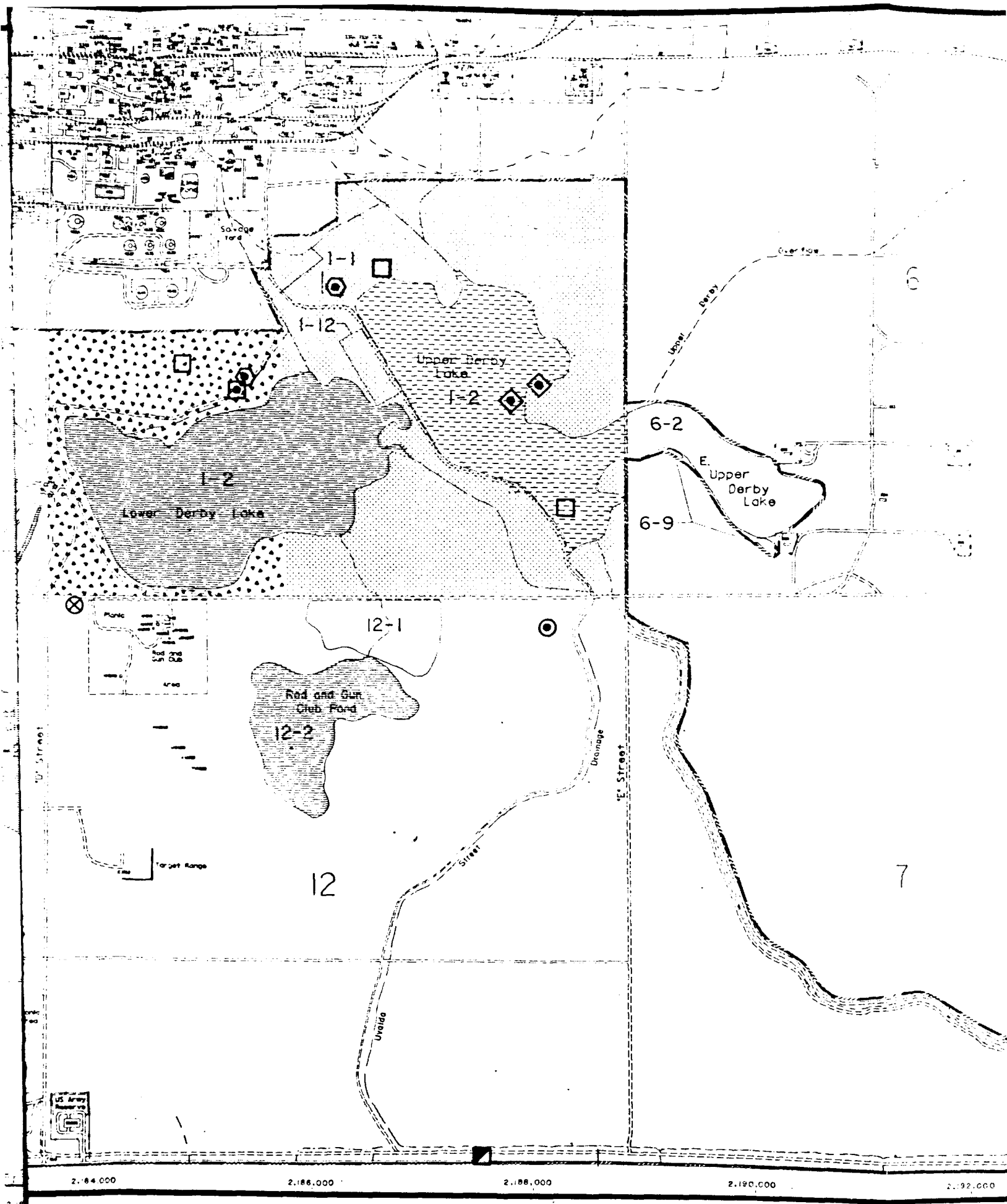
Reference: Air Remedial Investigation, 1988

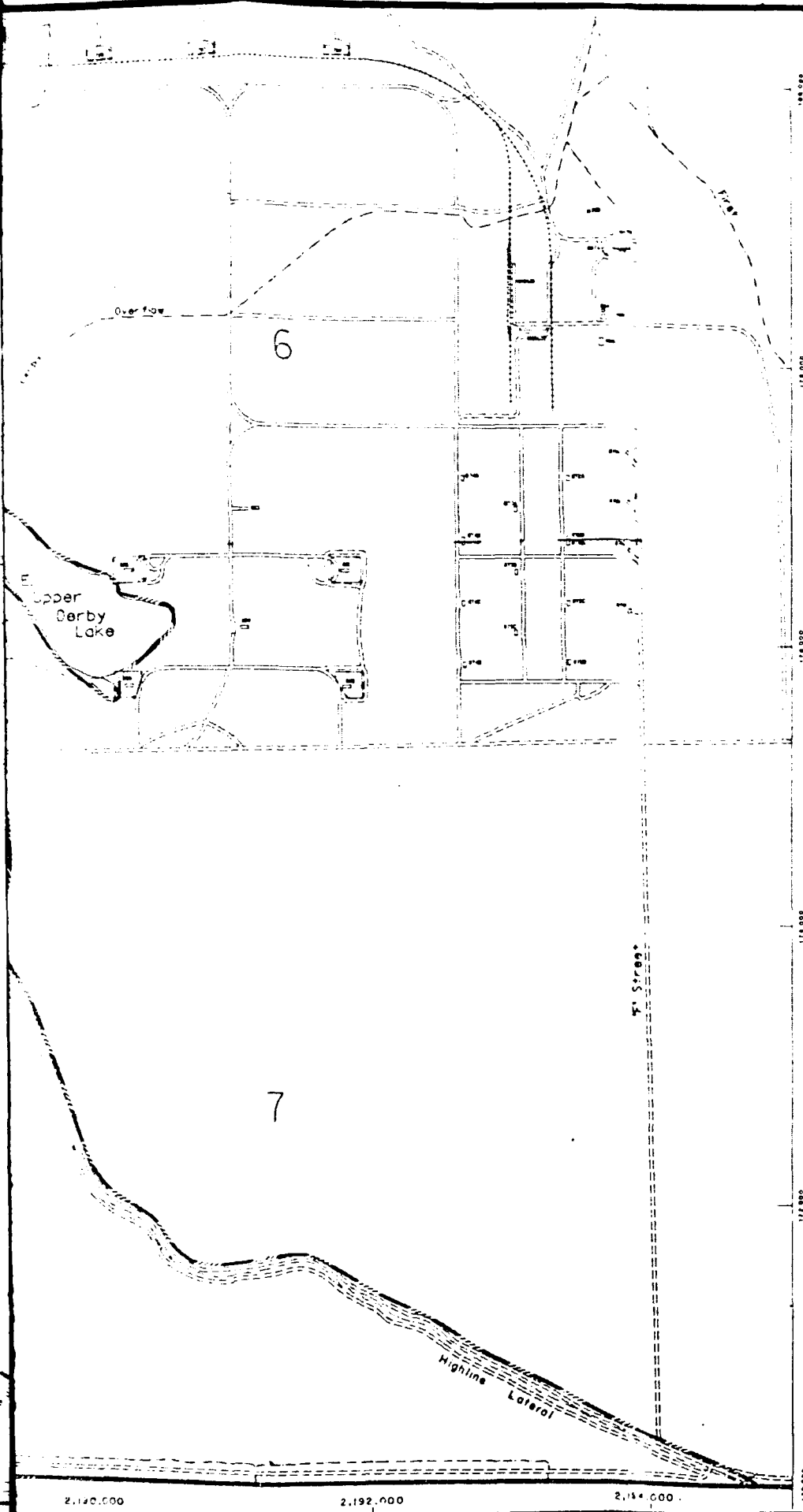
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

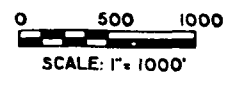
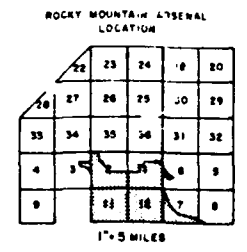
FIGURE: SSA 2.5-1
Air Quality Monitoring Stations
in the Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated





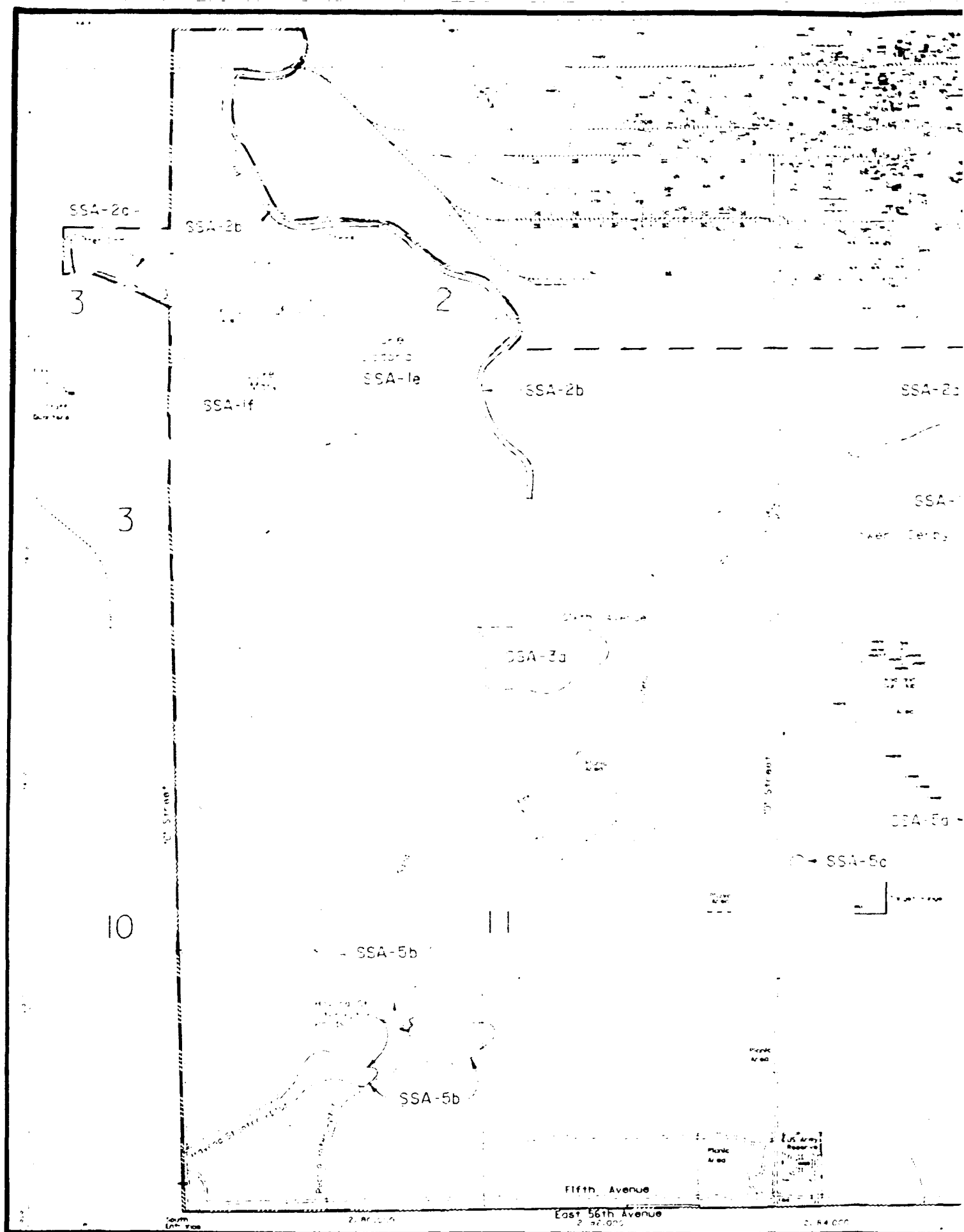


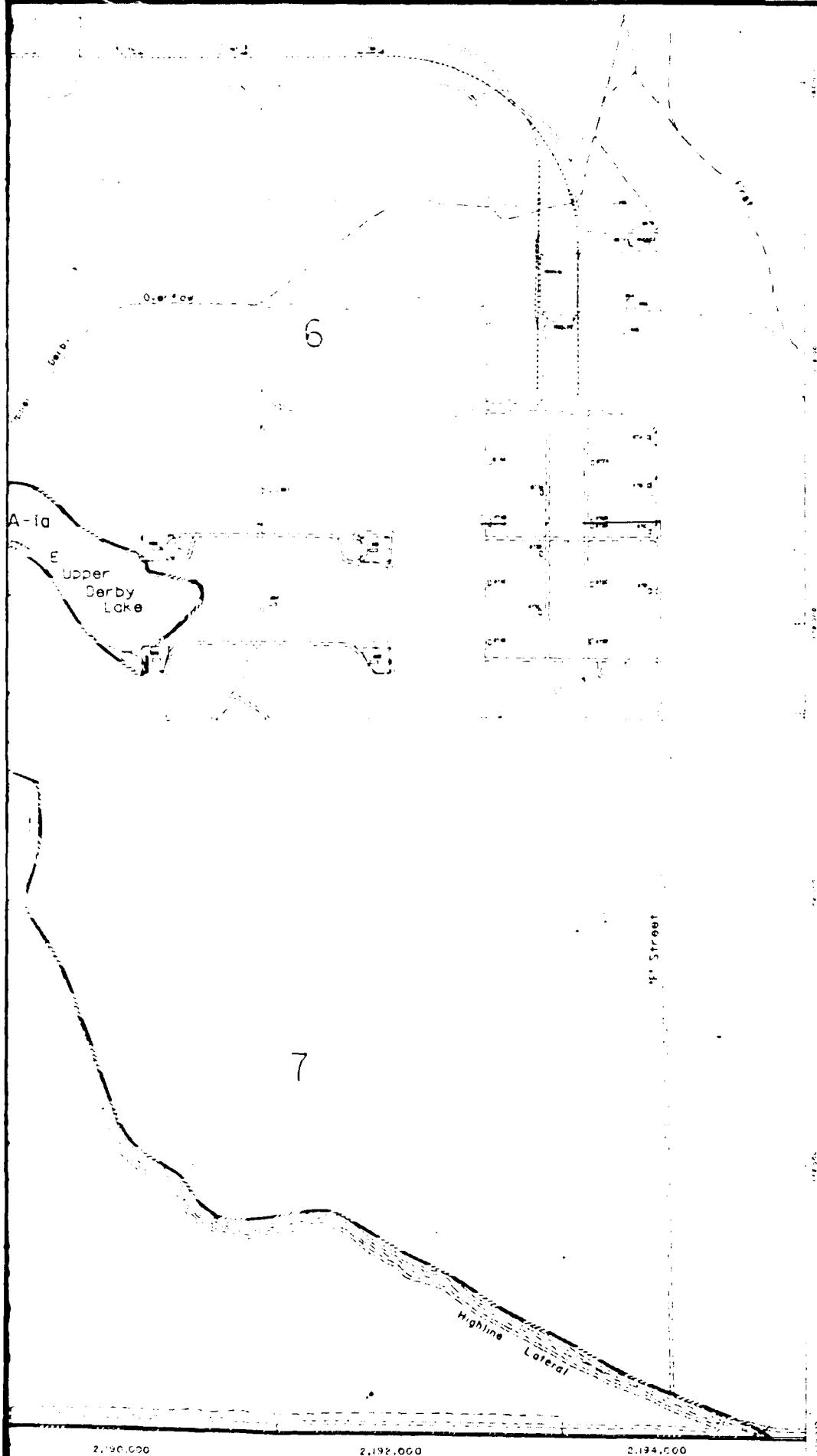
- LEGEND**
- Improved Road
 - - - Unimproved Road
 - Railroad Tracks
 - Existing Structure
 - Former Structure
 - Fence
 - 6** Section Number
 - Stream or Ditch
 - Study Area Boundary
- 174,000 State Plane Grid
- American Kestrel Eggs
 - American Kestrel Fledging Corcass
 - Ferruginous Hawk Sample Location
 - ⬡ Mallard Eggs
 - ◆ Northern Harrier Eggs
 - △ Red-Tailed Hawk Sample Location
 - Ring Necked Pheasant Sample Location
 - ⬢ Ring Necked Pheasant Eggs
 - ▨ USFWS Waterfowl Sample Location
 - ▩ Mallard Sample and Corcass Collection Site
 - ▧ Ring Necked Pheasant Corcass Collection Site
 - ▩ Mule Deer Sample Collection Site
 - ▩ Contaminant Values Below Detection Limit



Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 2.6-1
Biota Sample Locations in the
Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated

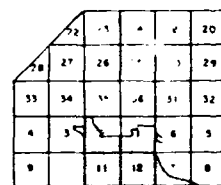




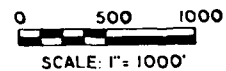
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

ROCKY MOUNTAIN ARSENAL



1/2 MILES



SCALE: 1"= 1000'

Prepared for:

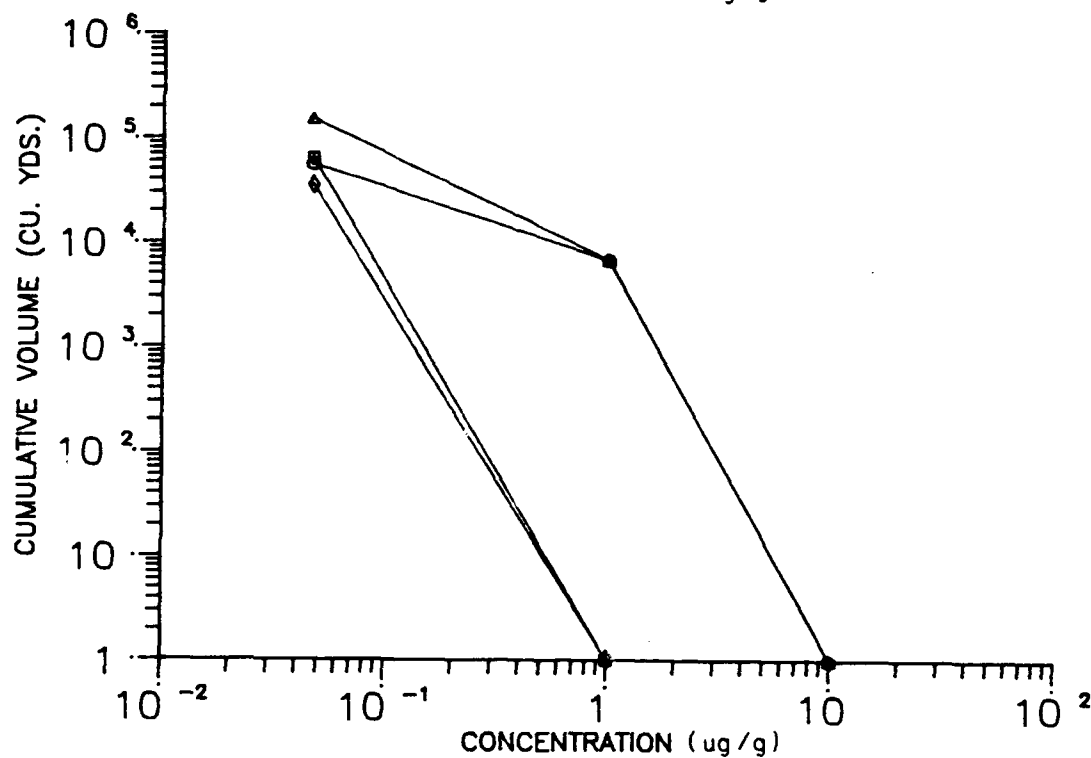
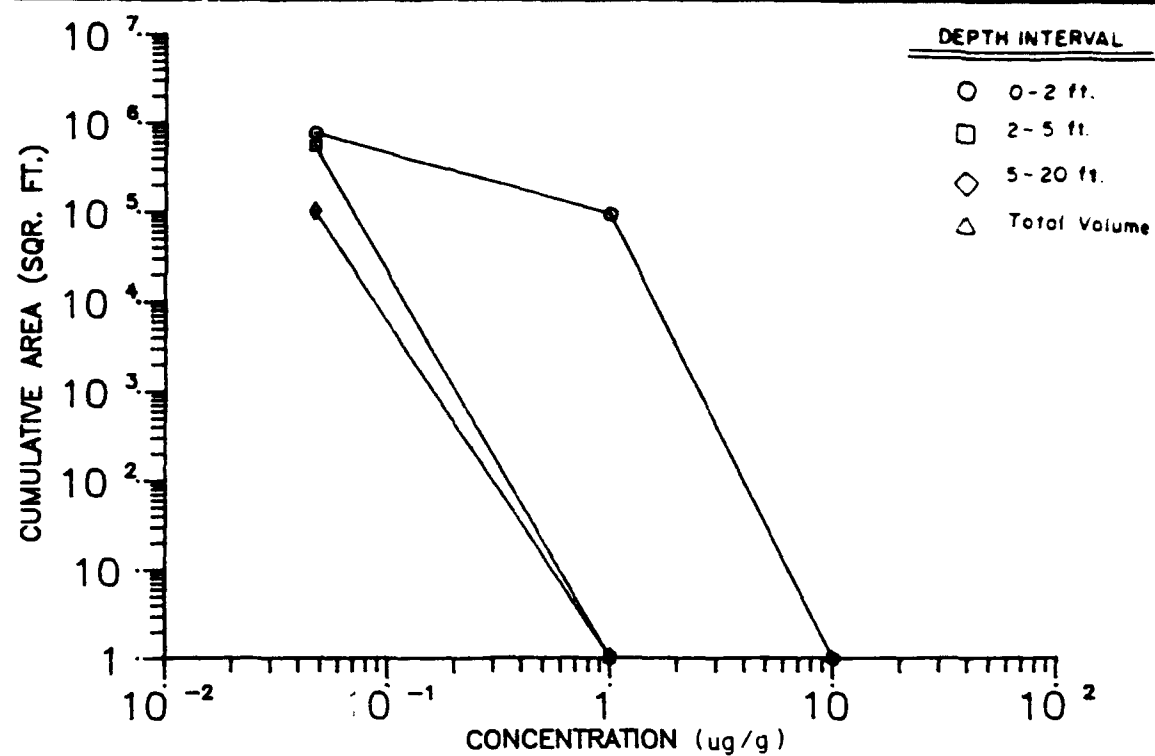
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.2-1
Revised Site Designations -
Southern Study Area
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated

2,190,000

2,192,000

2,194,000



Prepared for:

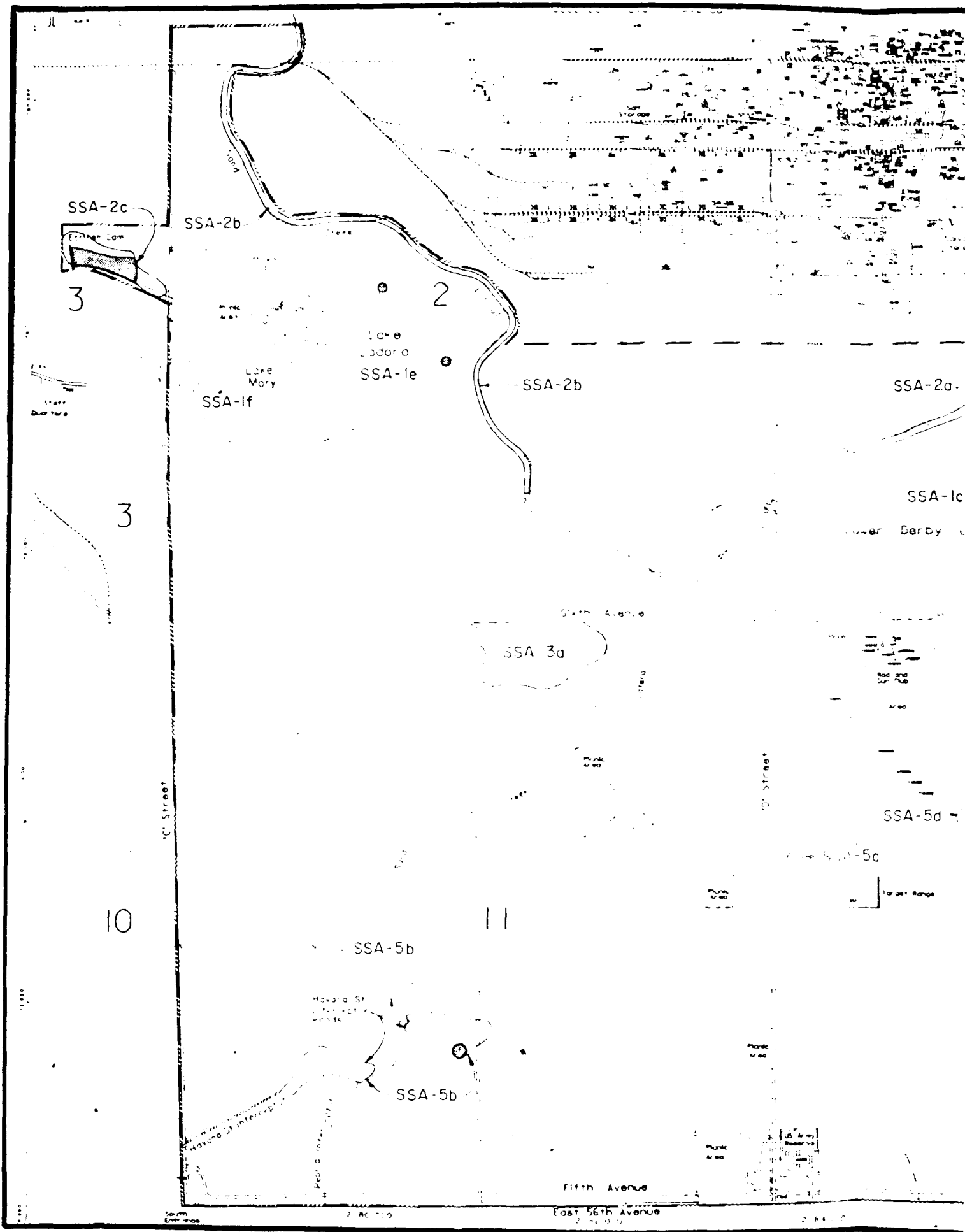
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

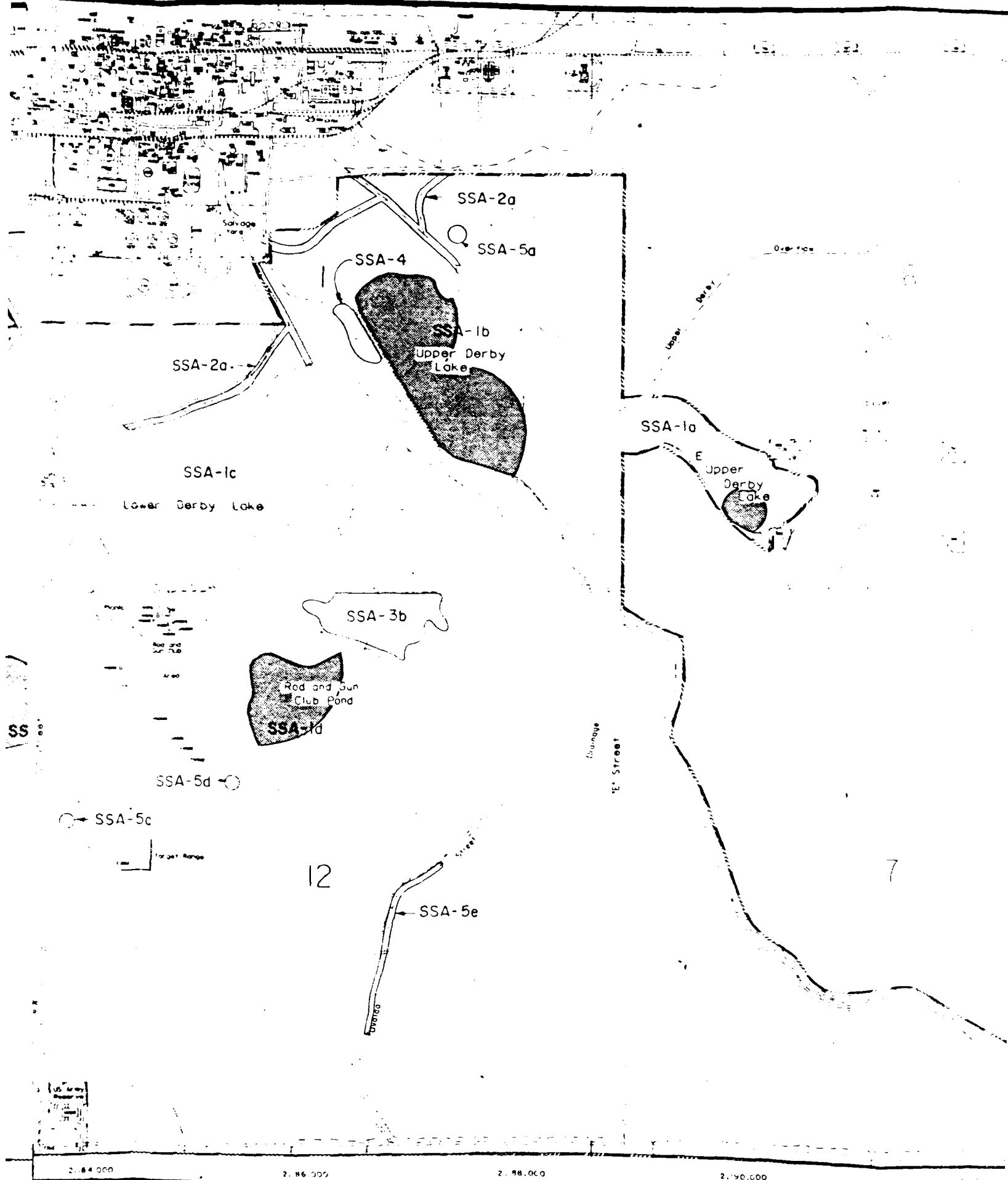
FIGURE SSA 3.4-1

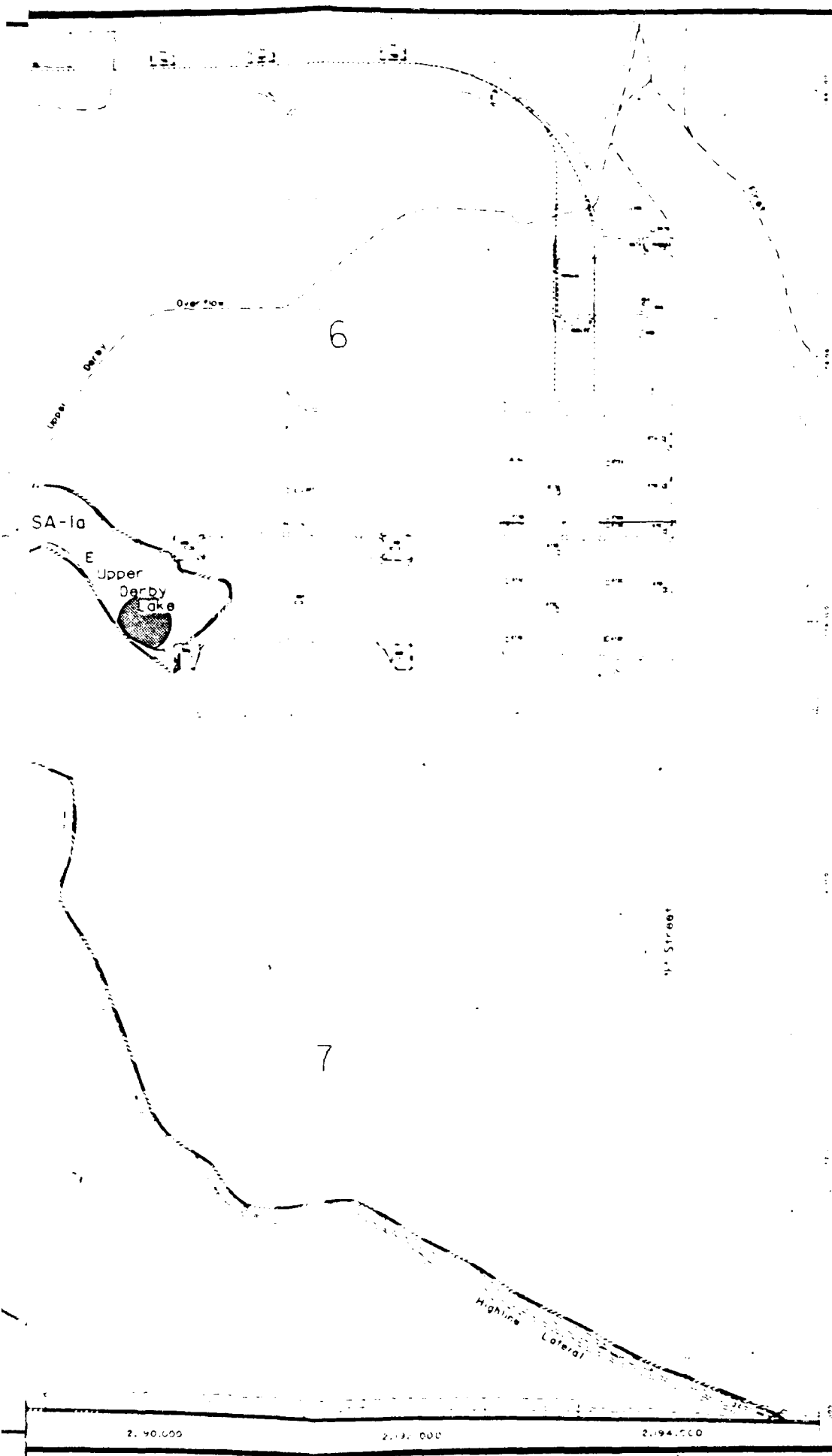
Cumulative Area and Volume of
Potentially Contaminated Soil for
Volatile Halogenated Organics

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- +— Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary

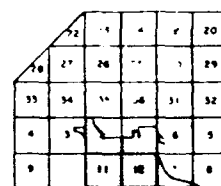
174,000 State Plane Grid



Extent of Potential Contamination in Soils and Sediments

Widths less Than 50 Feet and Diameters less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



1/2 MILES



SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

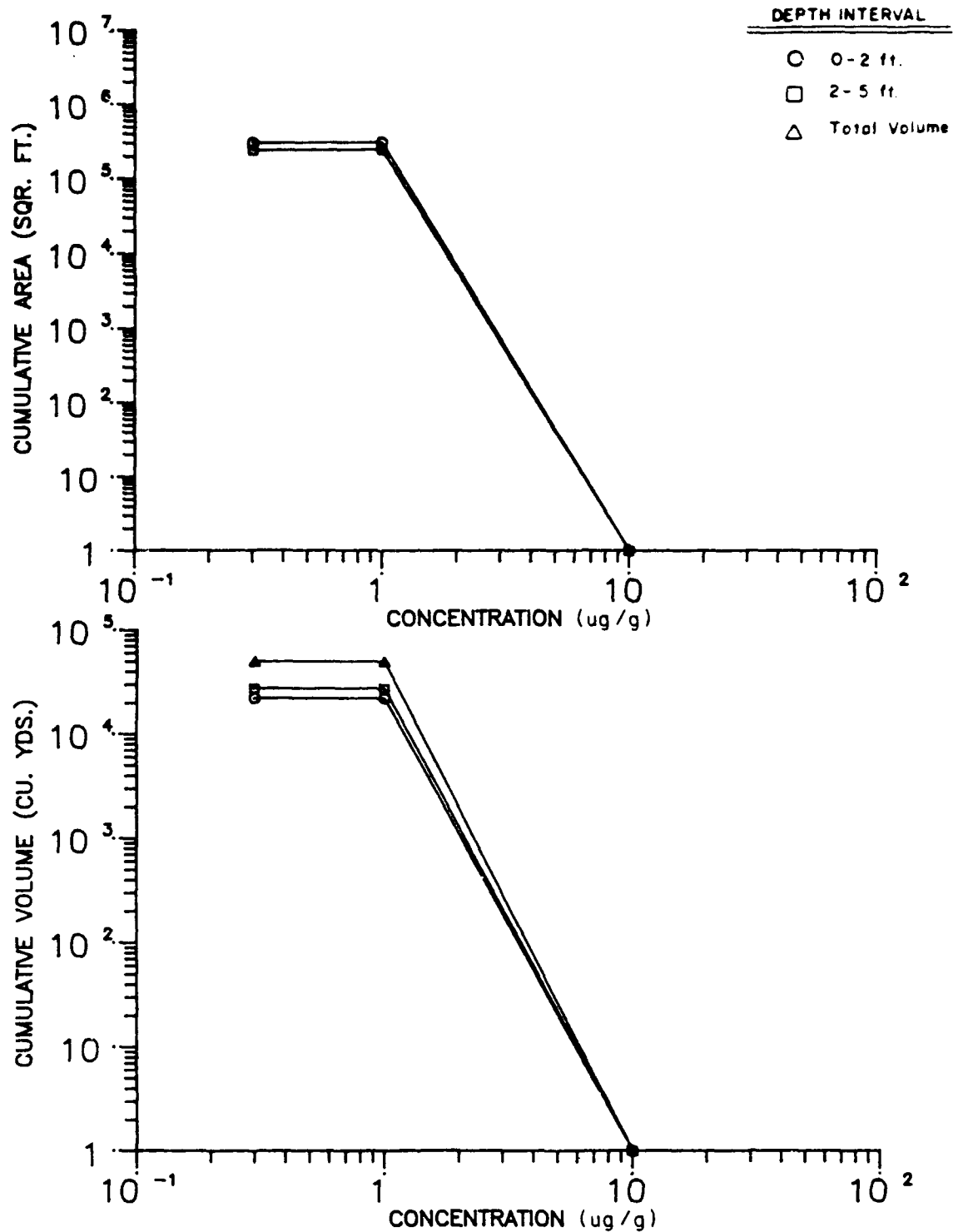
FIGURE: SSA 3.4-2

Estimated Areal Extent of Potential Contamination for Volatile Halogenated Organics, 0-5 ft. Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated



Prepared for:

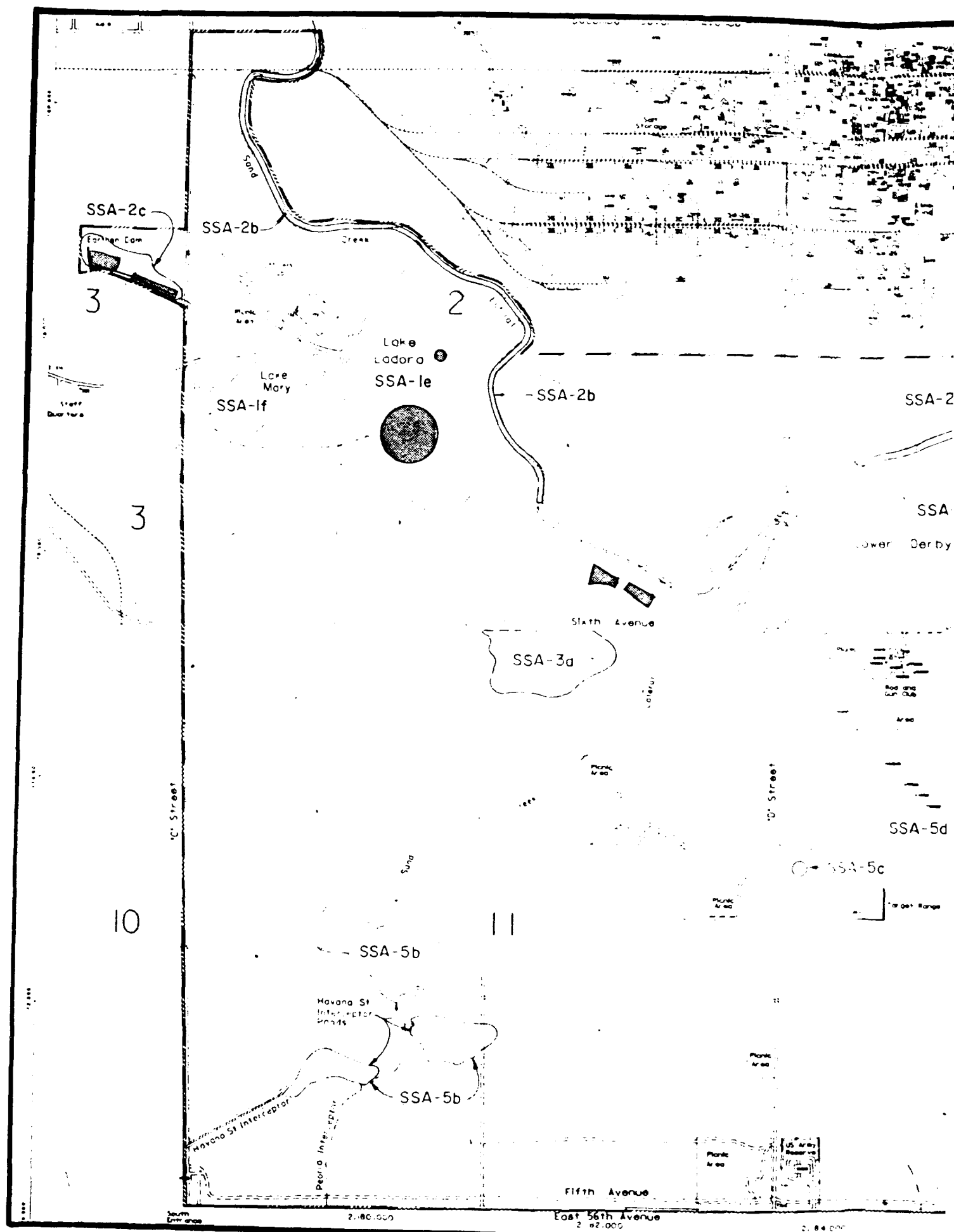
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

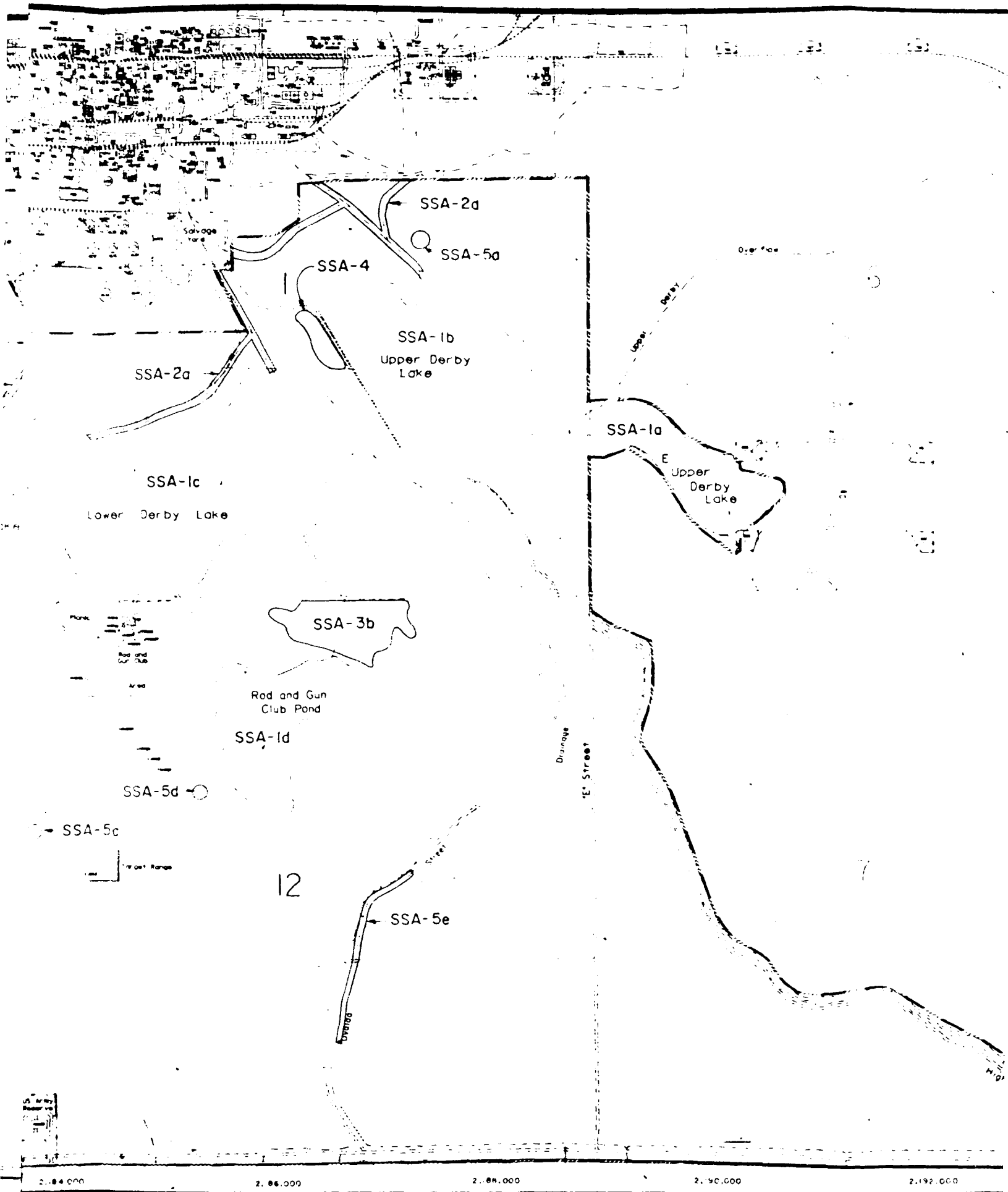
FIGURE SSA 3.4-3

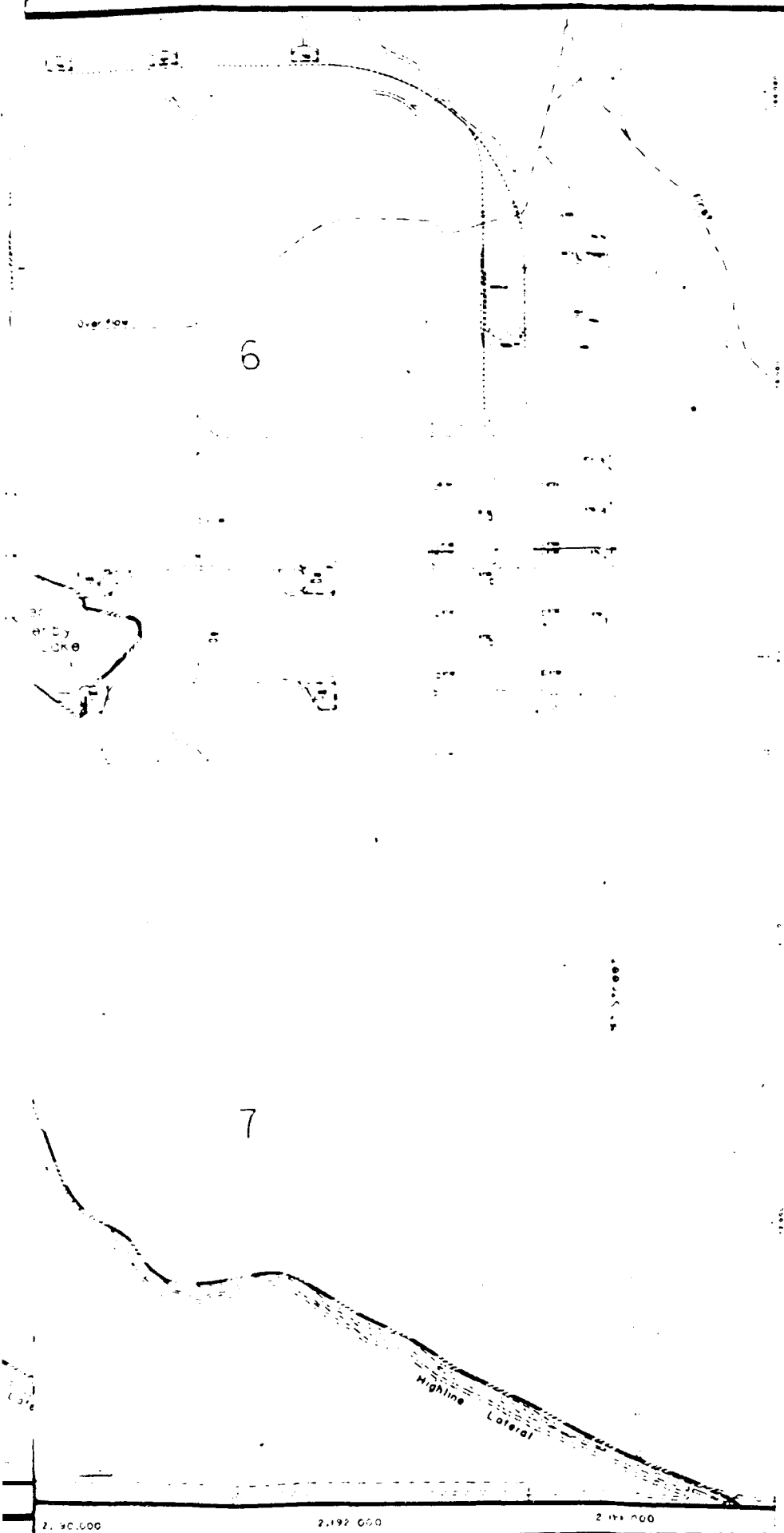
Cumulative Area and Volume of
Potentially Contaminated Soil for
Methylene Chloride

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







LEGEND

- Improved Road
- - - - - Unimproved Road
- - - - - Railroad Tracks
- - - - - Existing Structure
- - - - - Former Structure
- - - - - Fence
- 6 Section Number
- - - - - Stream or Ditch
- - - - - Study Area Boundary

174,000 State Plane Grid



Extent Of Potential Contamination in Soils and Sediments

Widths less Than 50 Feet and Diameters less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



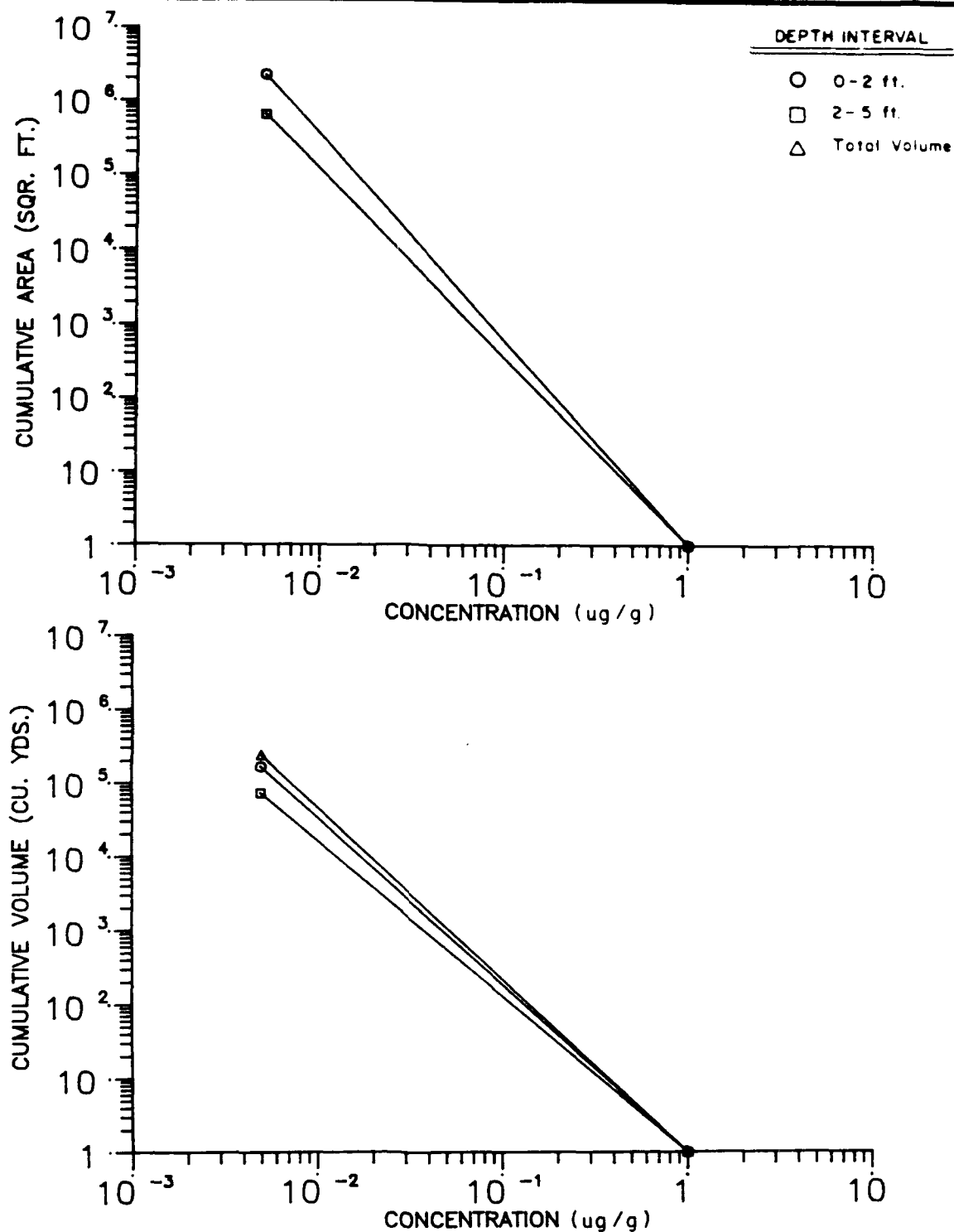
0 500 1000
SCALE: 1" = 1000'

Prepared for: .

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-4
Estimated Areal Extent of Potential Contamination
for Methylene Chloride, 0-5 ft. Depth Interval

Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



Prepared for:

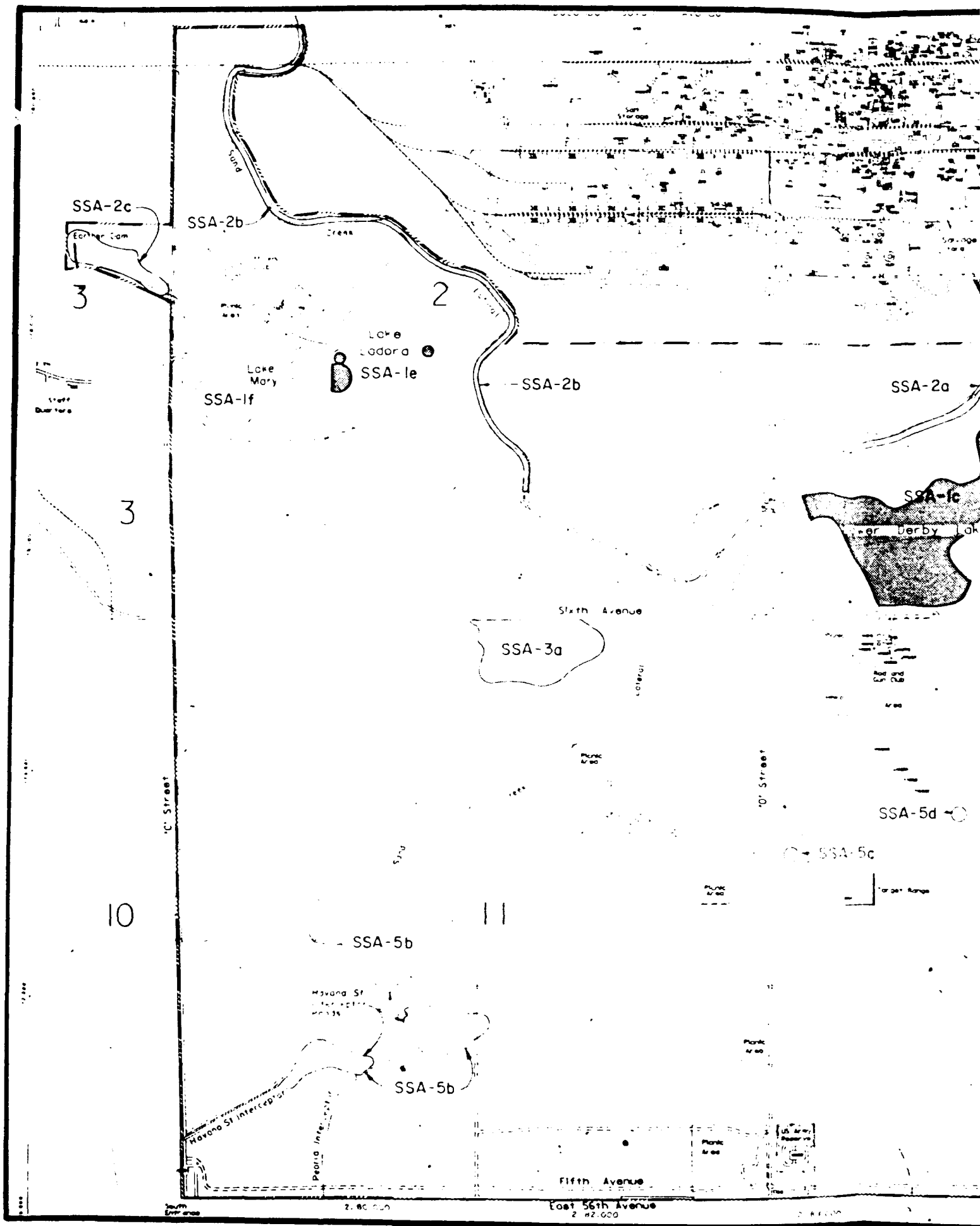
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

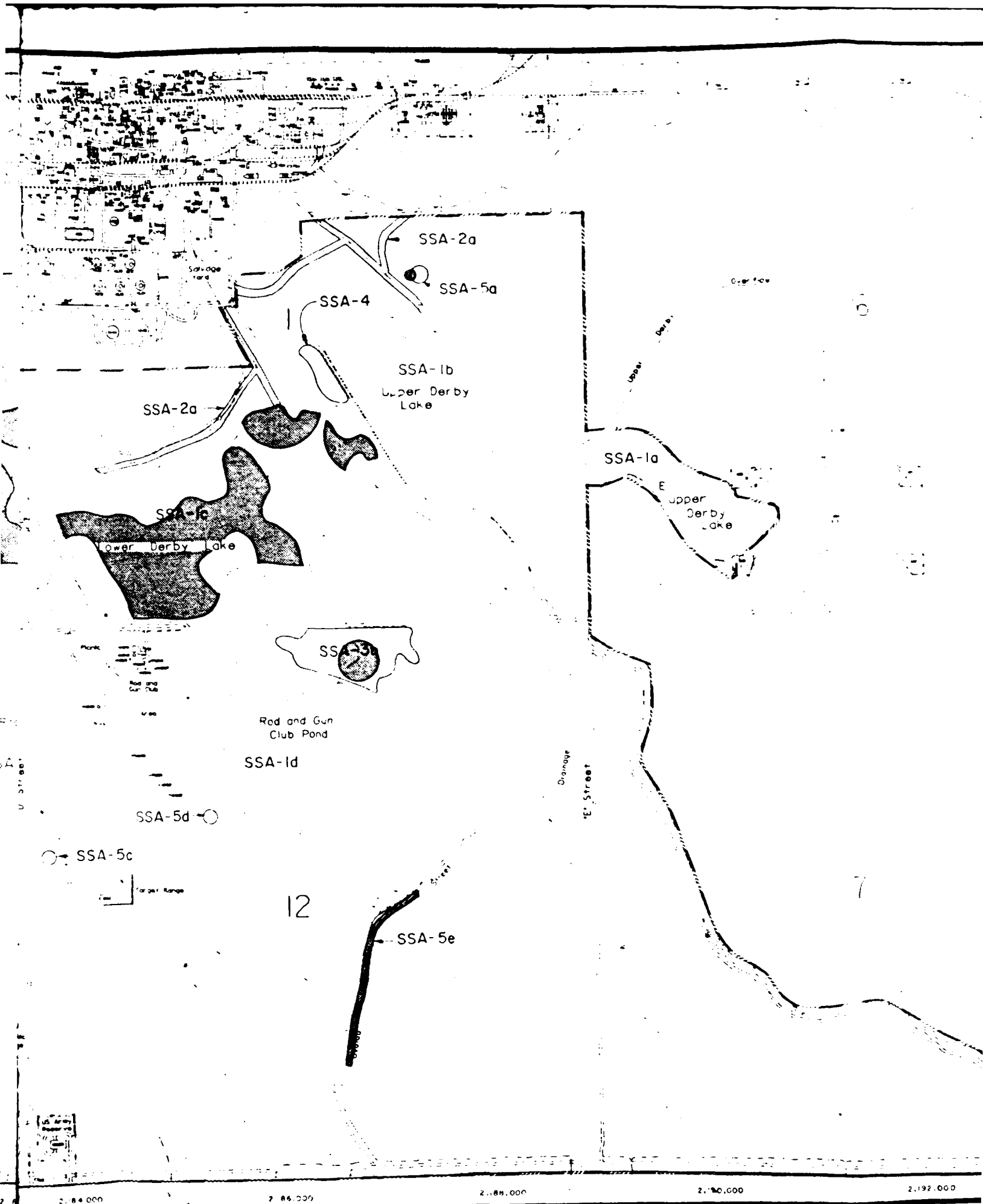
FIGURE SSA 3.4-5

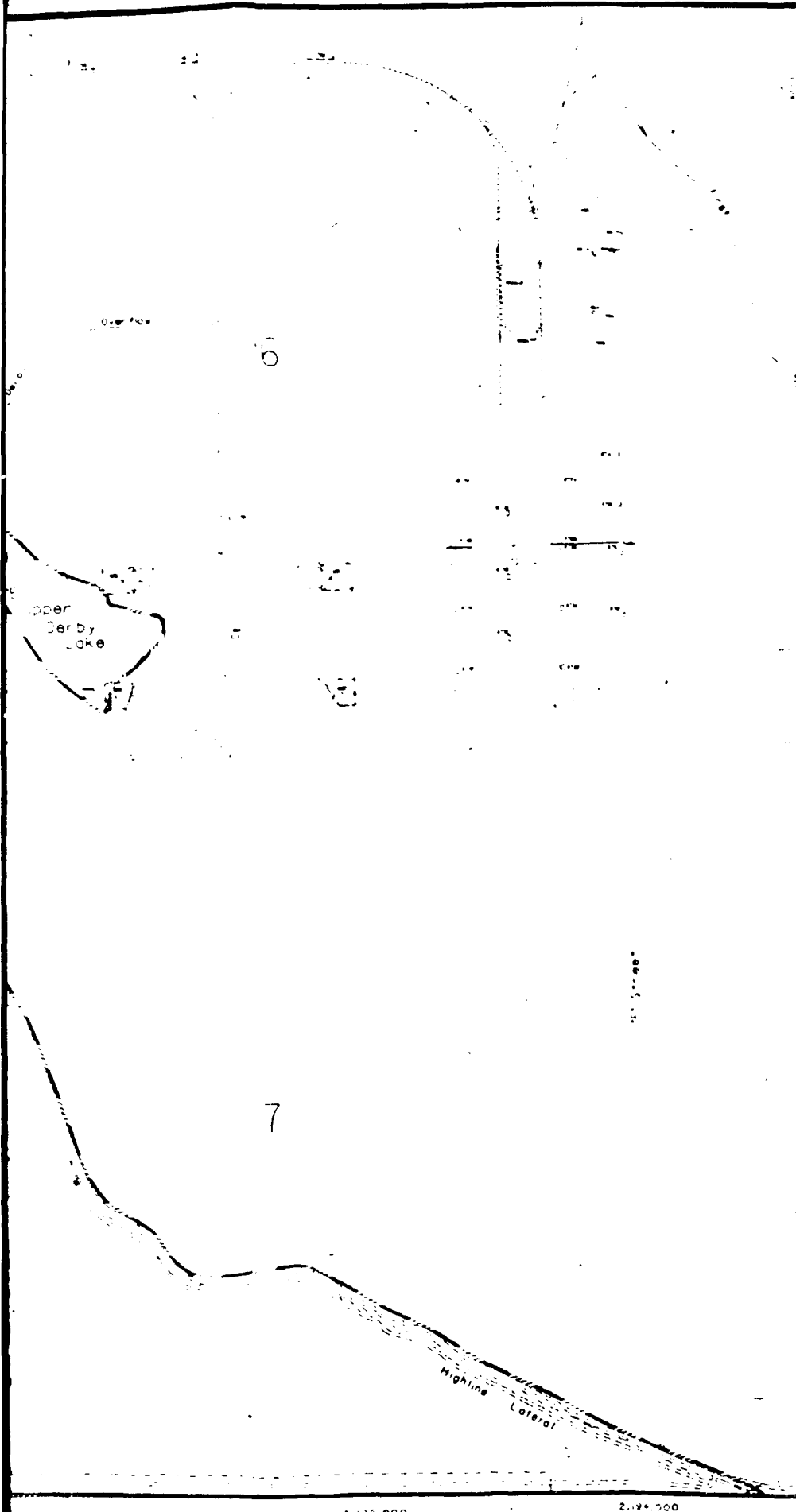
Cumulative Area and Volume of
Potentially Contaminated Soil for
Dibromochloropropane

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







LEGEND

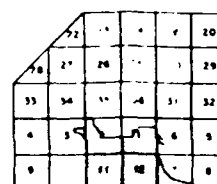
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6** Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid



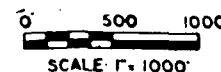
Extent Of Potential Contamination
in Soils and Sediments

Widths less Than 50 Feet and Diameters
less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



1:5 Miles



Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

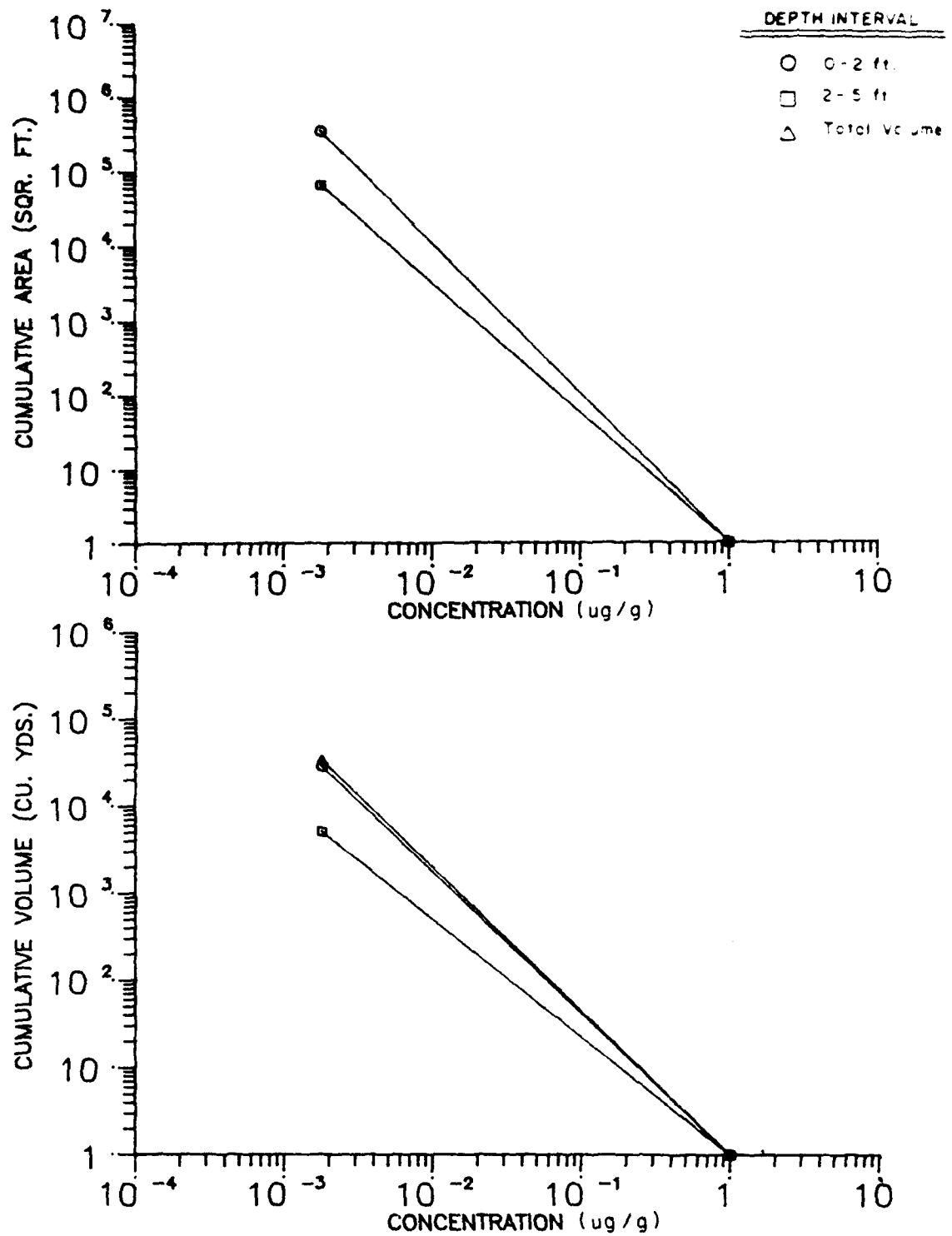
FIGURE: SSA 3.4-6

Estimated Areal Extent of Potential Contamination
for Dibromochloropropane, 0-5 ft. Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated



Prepared for:

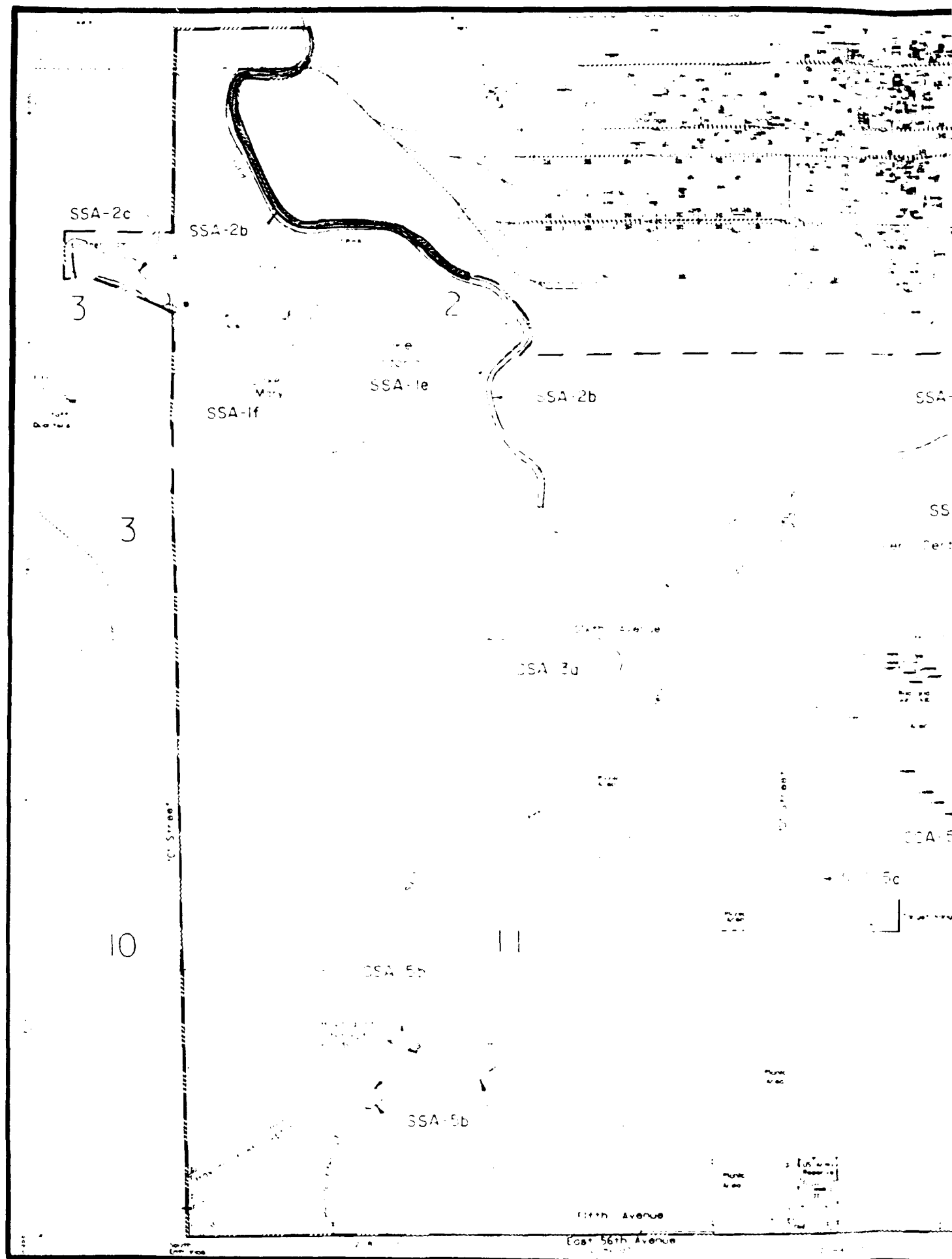
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

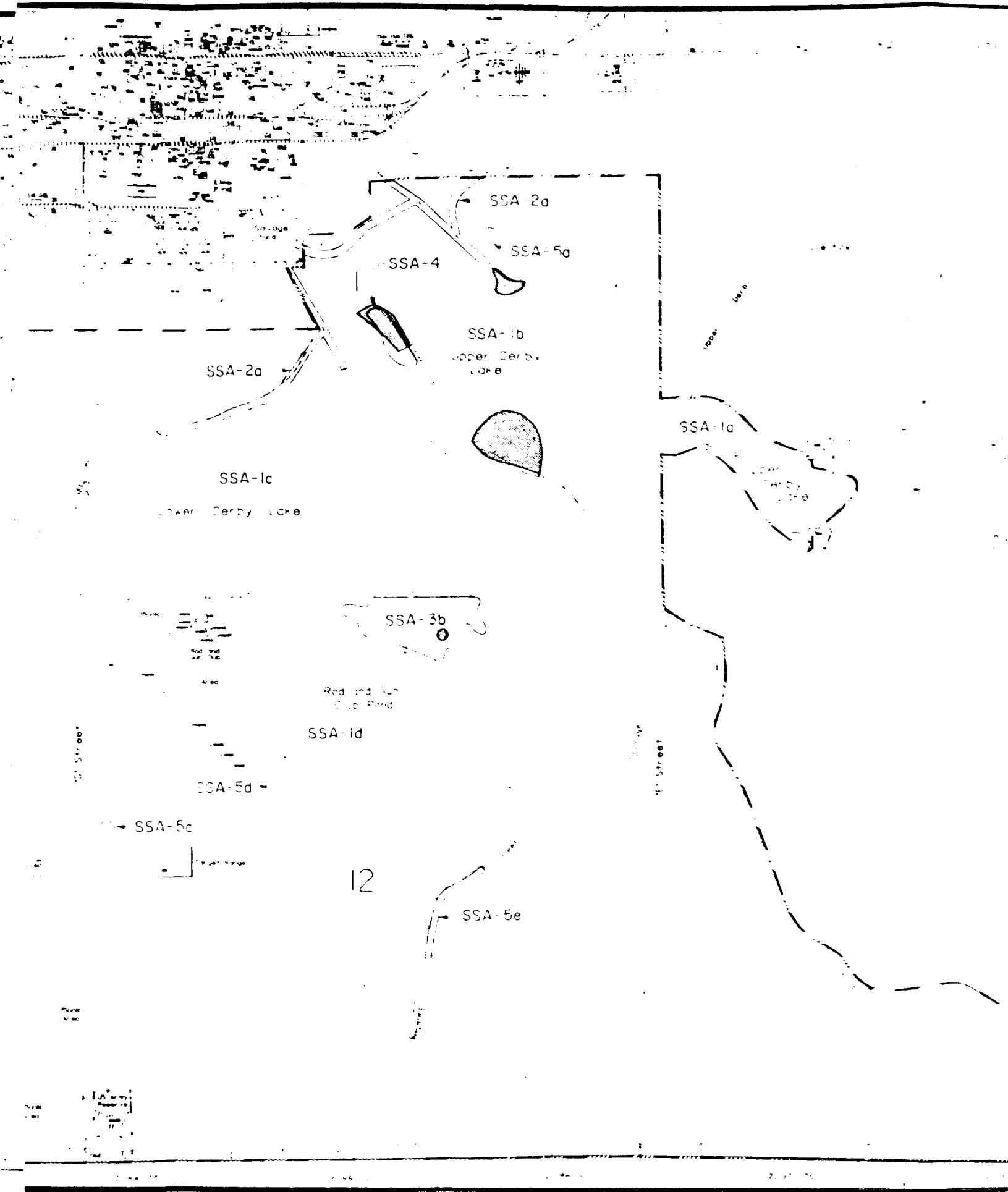
FIGURE SSA 3.4-7

Cumulative Area and Volume of
Potentially Contaminated Soil for
Semivolatile Halogenated Organics

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated





LEGEND

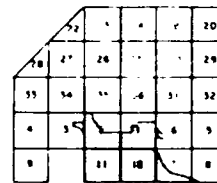
- Improved Road
- Unimproved Road
- - - Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6 Section Number
- - - Stream or Ditch
- - - Study Area Boundary
- 174,000 State Plane Grid



Extent of Potential Contamination
in Soils and Sediments

Widths less Than 50 Feet and Diameters
less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



1" = 500'

0 500 1000

SCALE 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

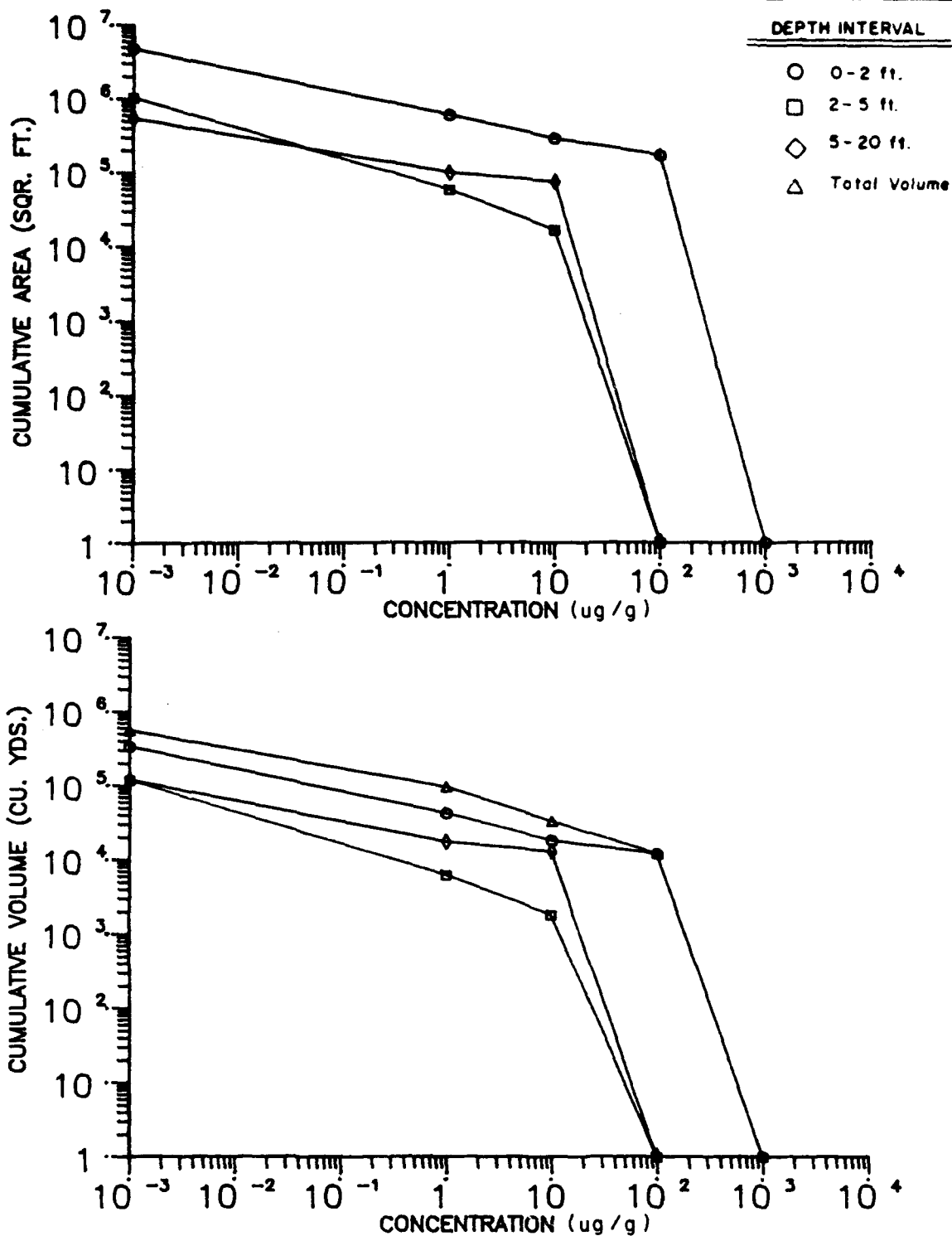
FIGURE: SSA 3.4-8

Estimated Areal Extent of Potential Contamination
For Semivolatile Halogenated Organics, 0-5 ft.
Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated



Prepared for:

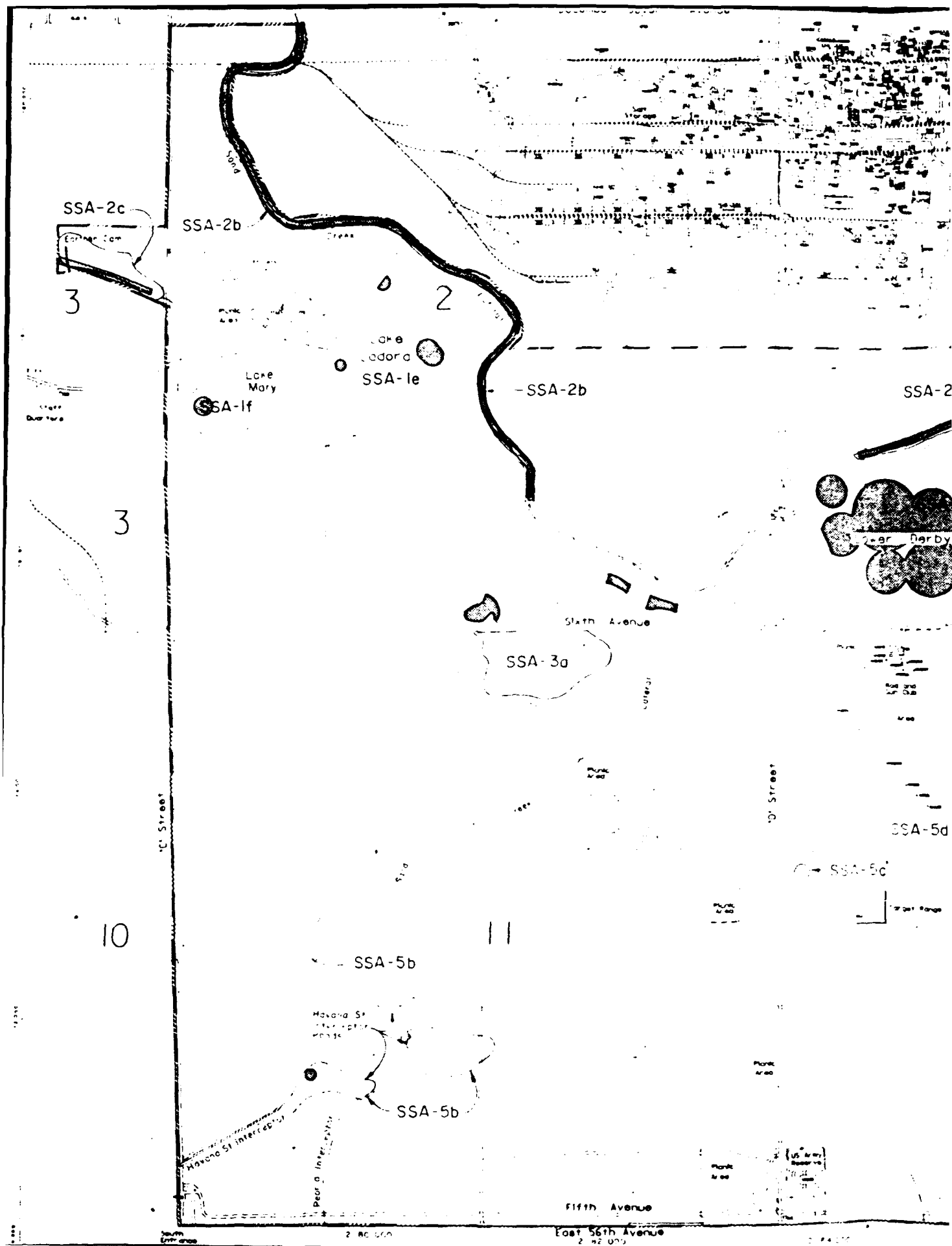
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

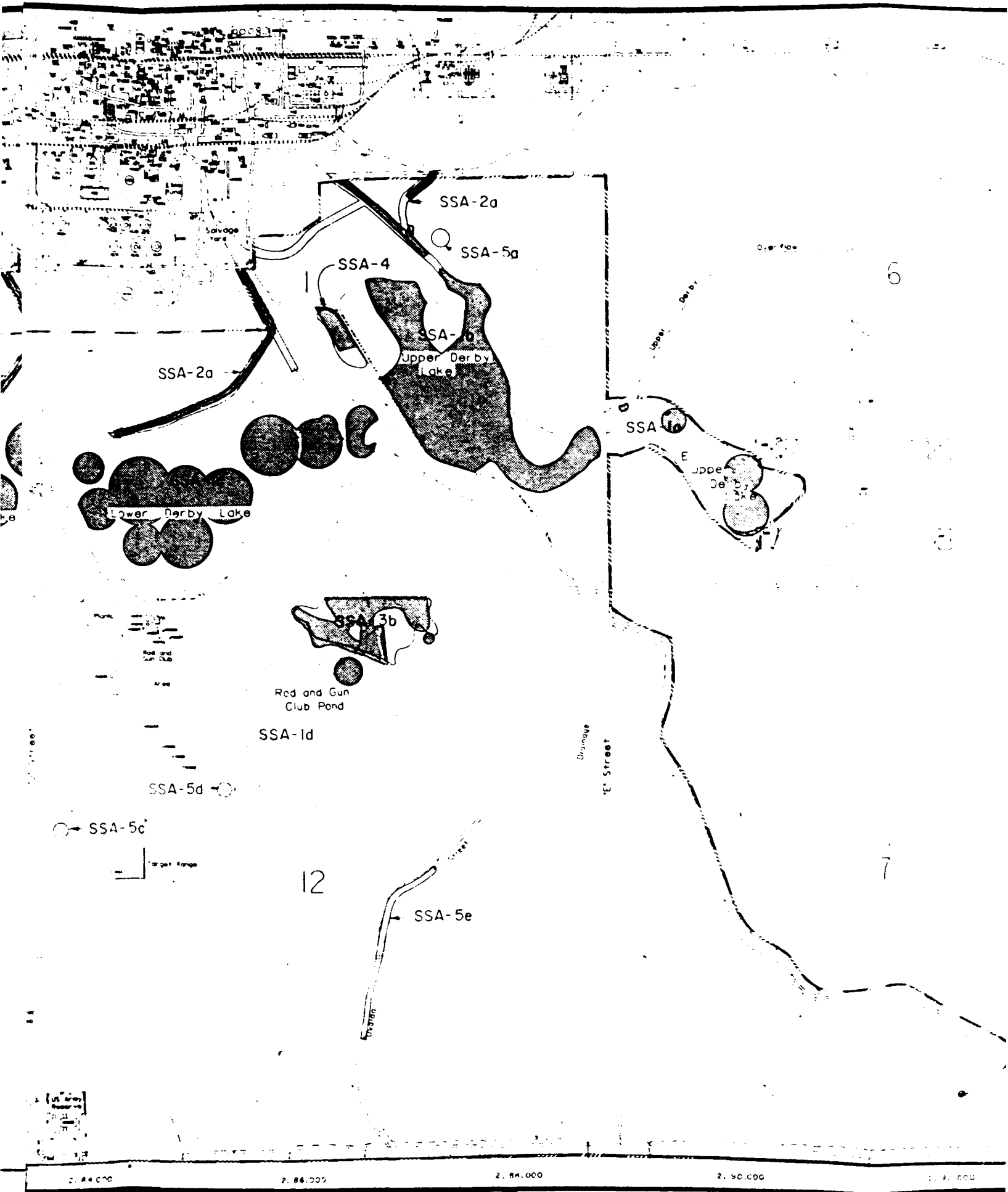
FIGURE SSA 3.4-9

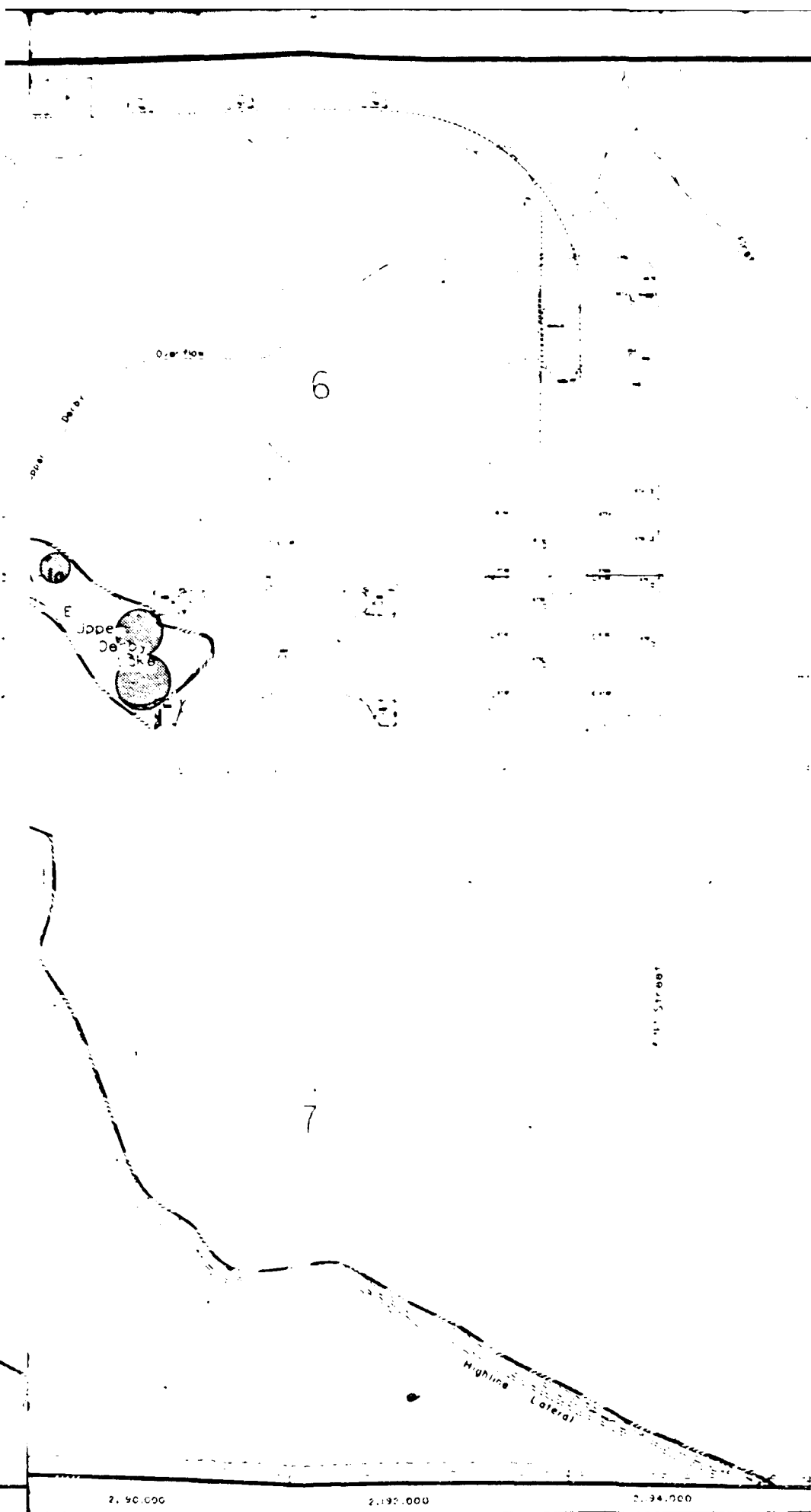
Cumulative Area and Volume of Potentially
Contaminated Soil for Organochlorine Pesticides
(Aldrin, Dieldrin, Endrin, Isodrin)

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







LEGEND

Improved Road

Unimproved Road

Railroad Tracks

Existing Structure

Former Structure

Fence

6 Section Number

Stream or Ditch

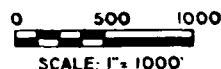
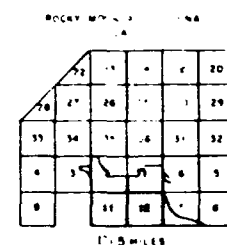
Study Area Boundary

174,000 State Plane Grid



Extent Of Potential Contamination in Soils and Sediments

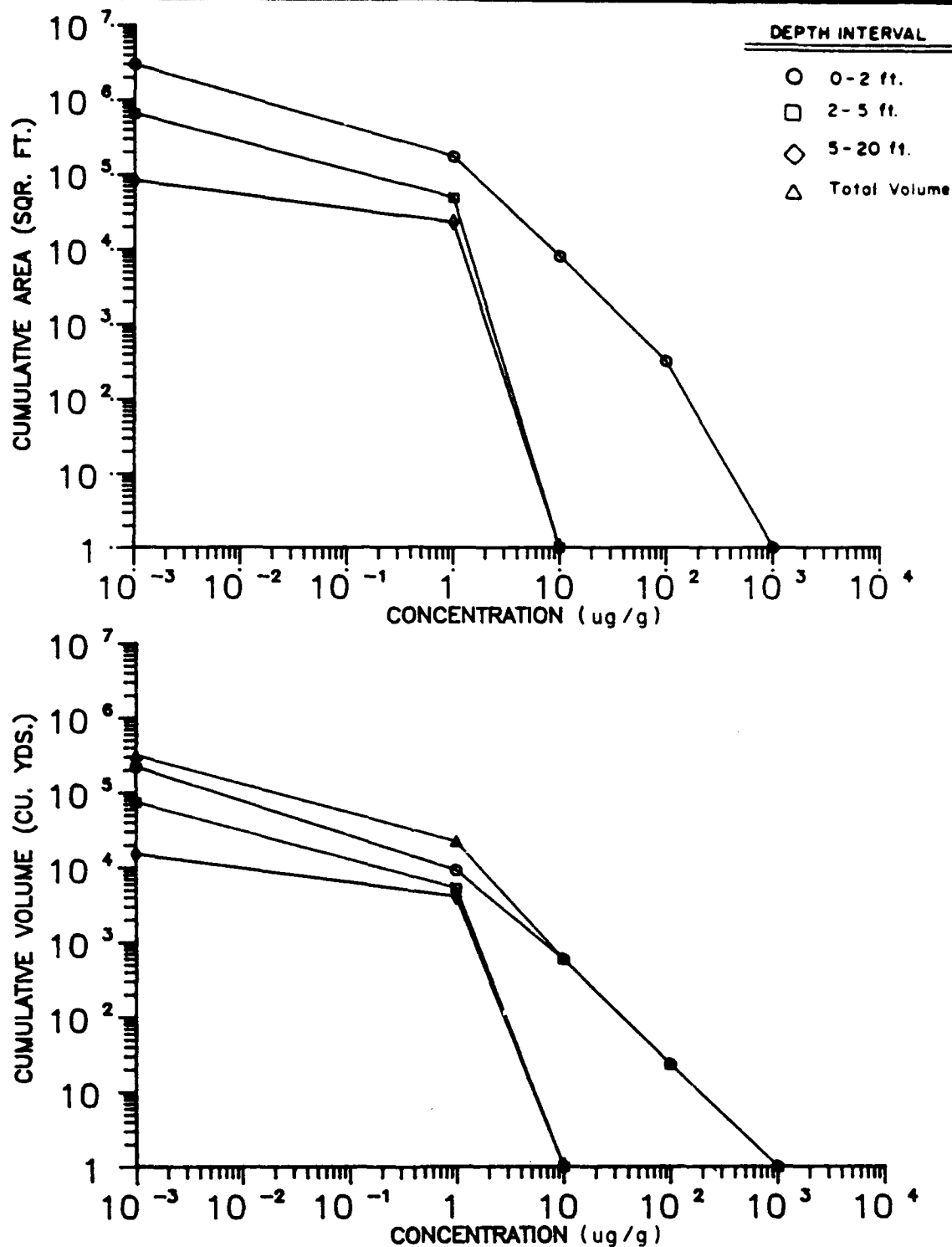
Widths less Than 50 Feet and Diameters less Than 75 Feet, Not Shown To Scale



Prepared for:

Program Manager's Office for Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-10
Estimated Areal Extent of Potential Contamination For Organochlorine Pesticides (Aldrin, Dieldrin, Endrin, Isodrin), 0-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



Prepared for:

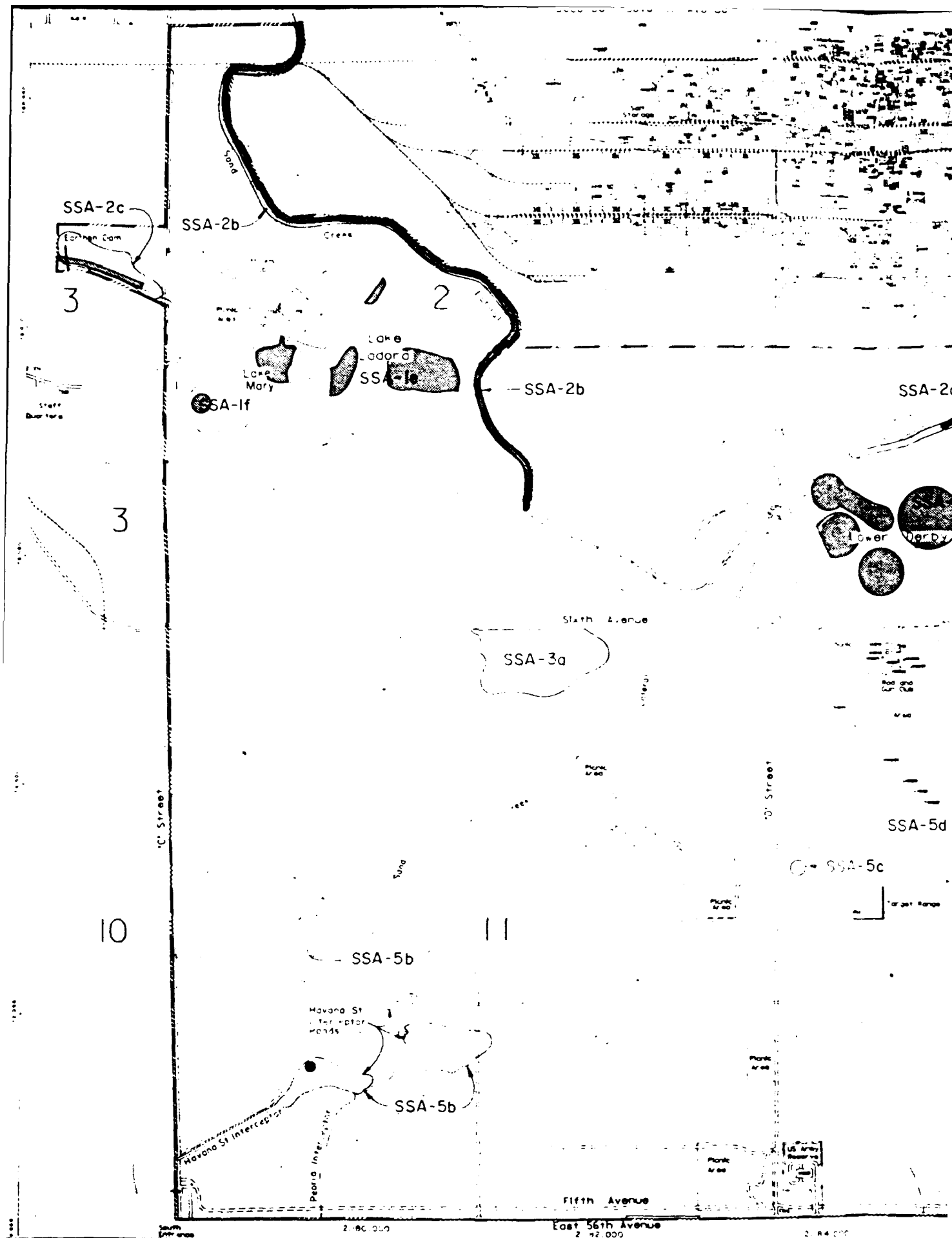
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

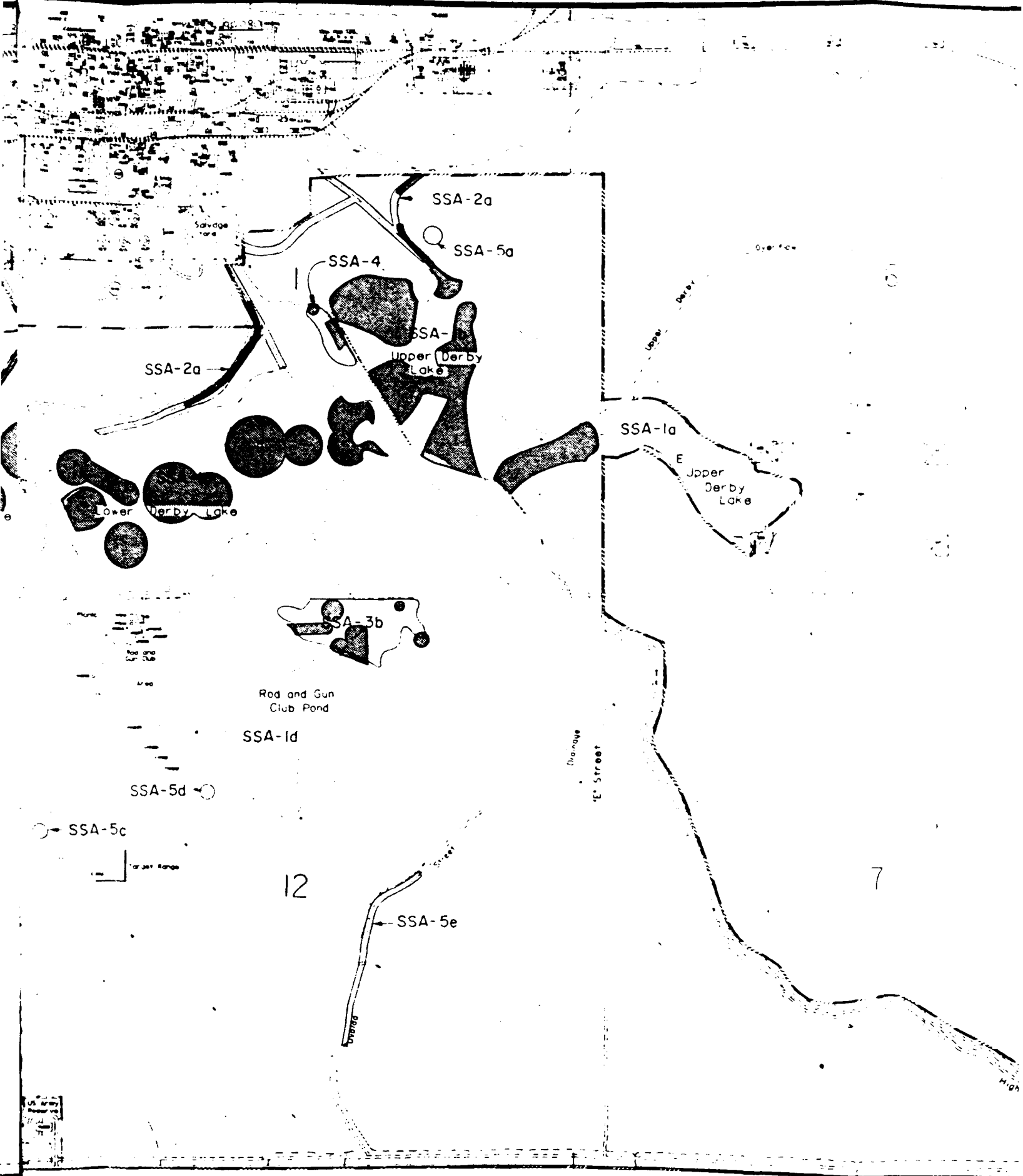
FIGURE SSA 3.4-II

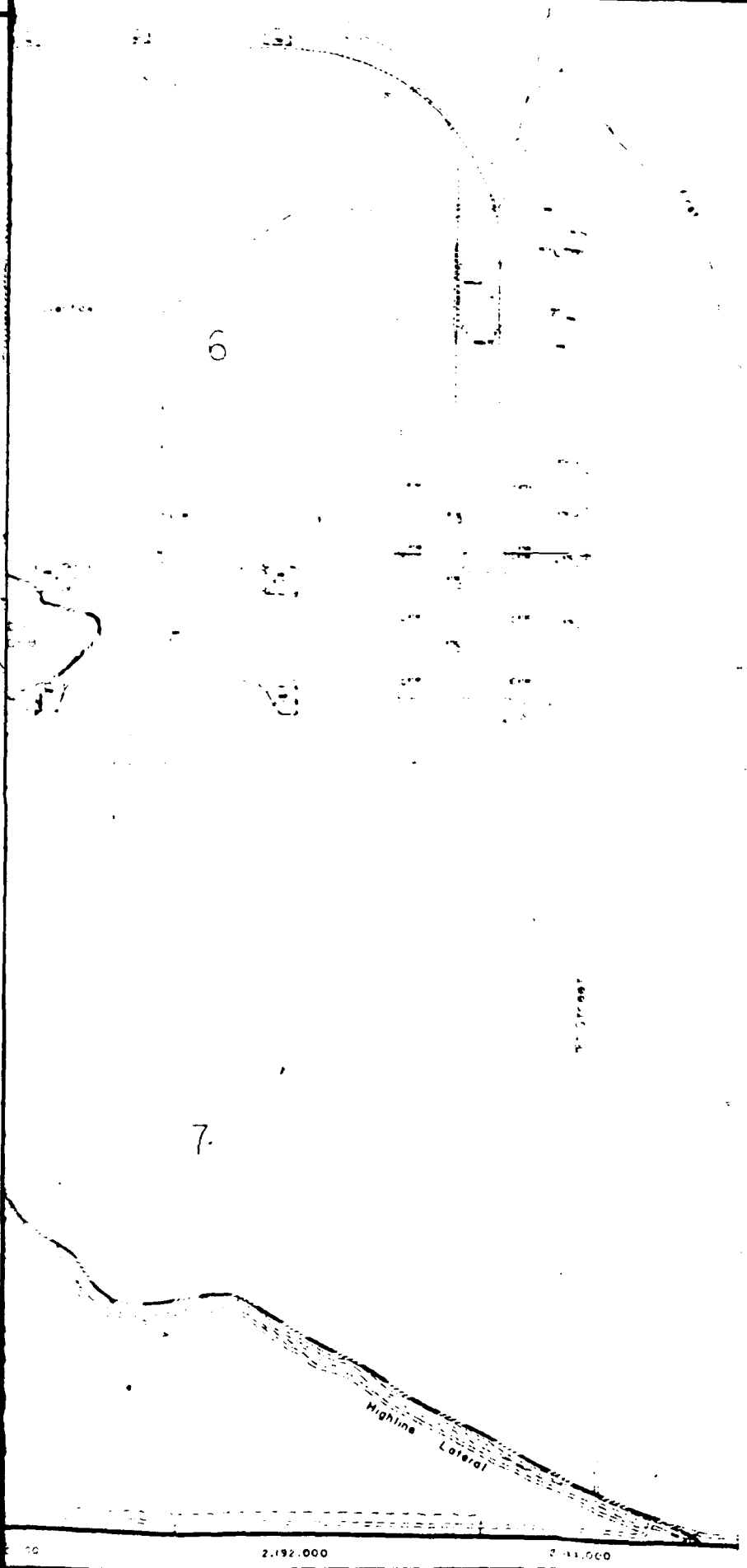
Cumulative Area and Volume of Potentially
Contaminated Soil for Organochlorine
Pesticides (DDE, DDT, and Chlordane)

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated



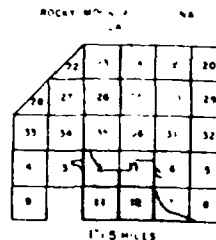




LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary
- 174,000 State Plane Grid

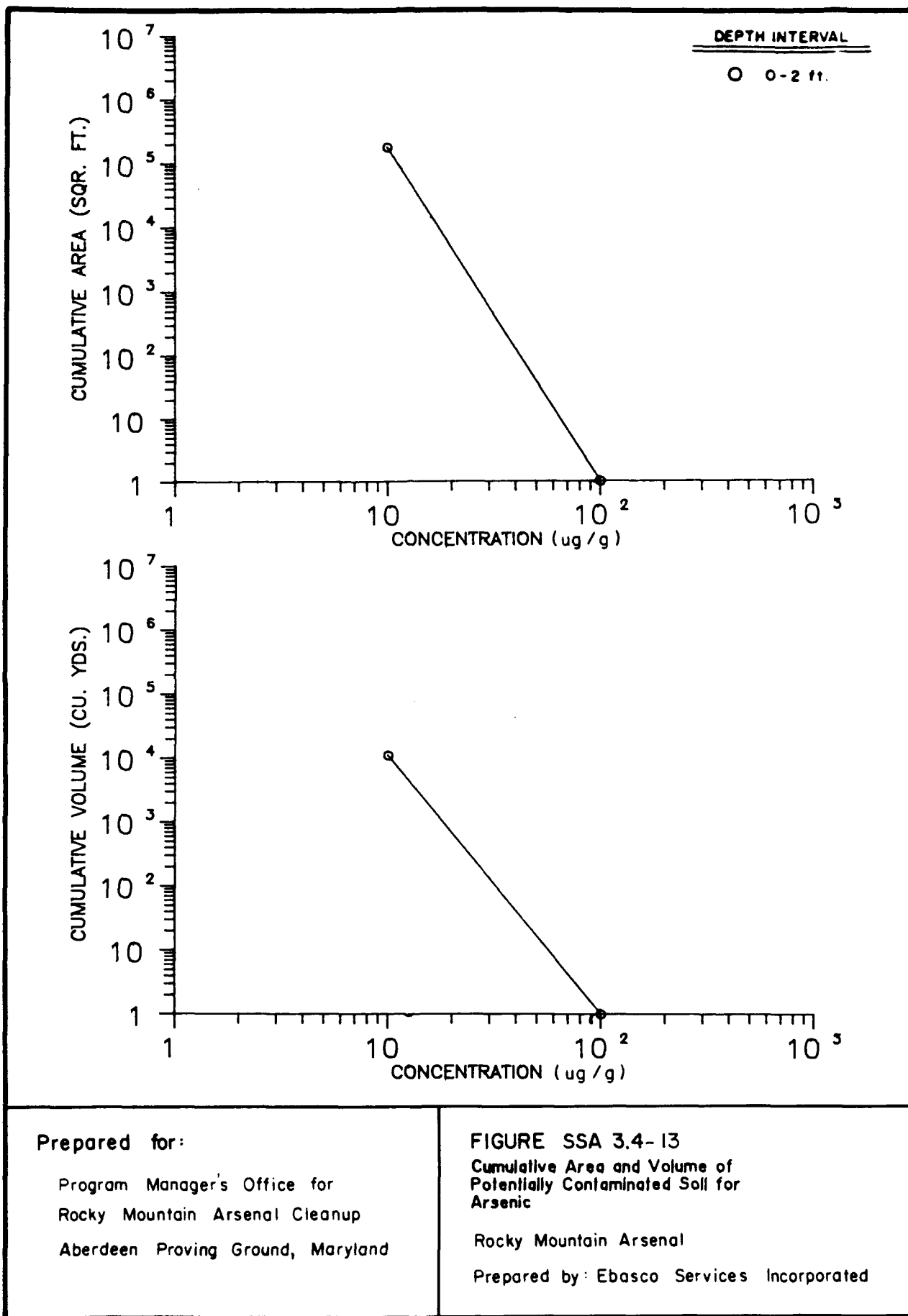
Extent Of Potential Contamination in Soils and Sediments
Widths less Than 50 Feet and Diameters less Than 75 Feet, Not Shown To Scale

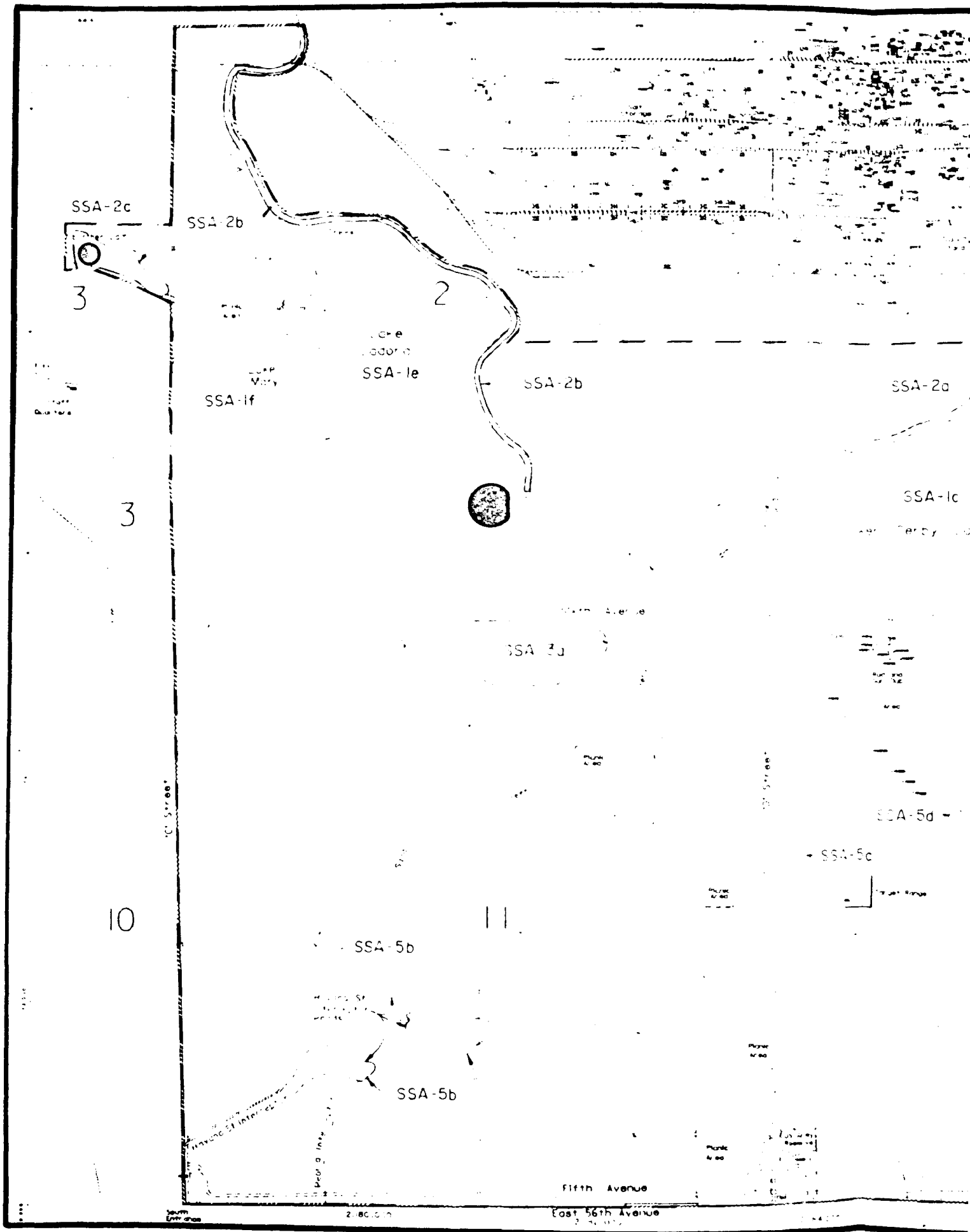


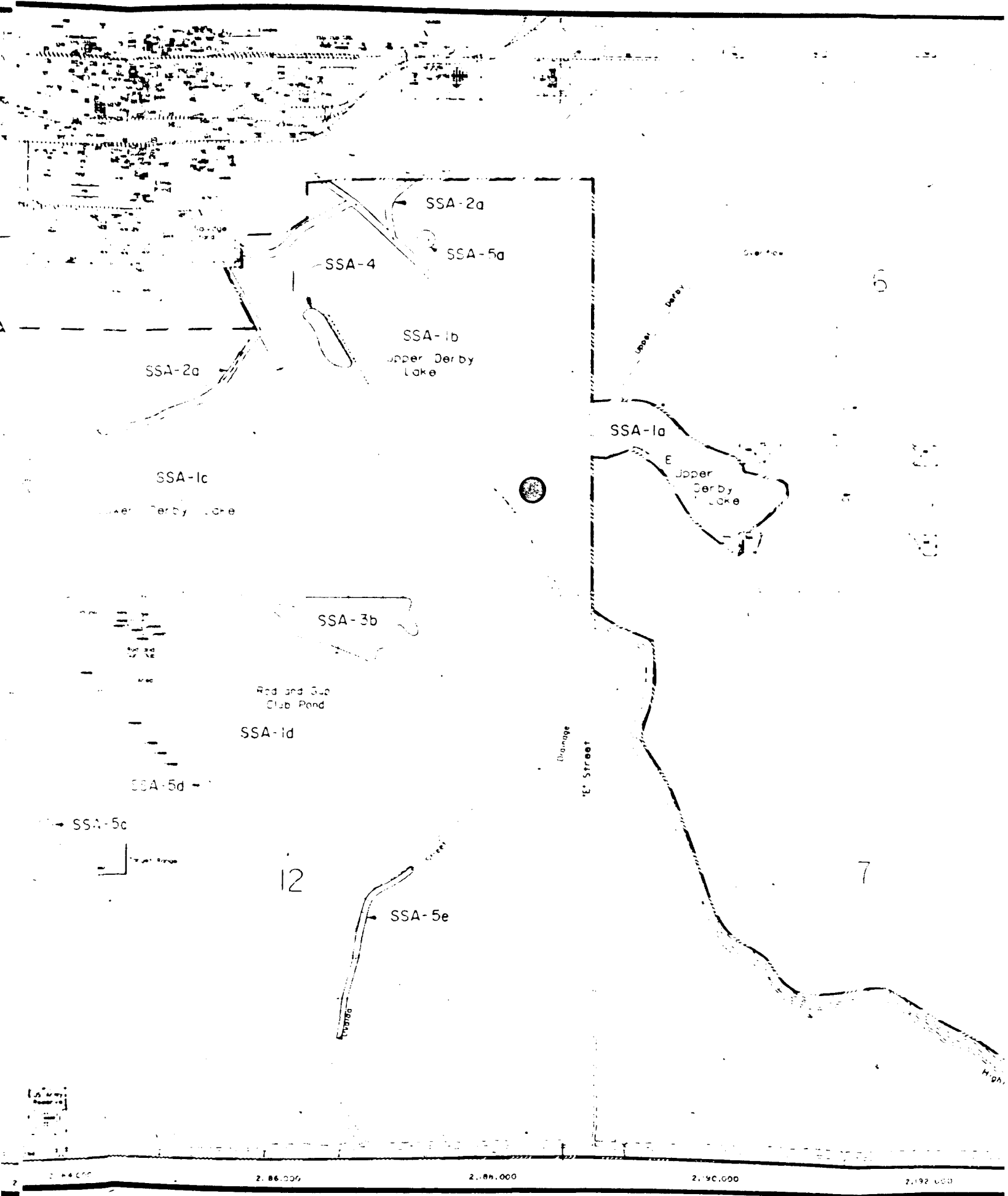
0 500 1000
SCALE: 1" = 1000'

Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-12
Estimated Areal Extent of Potential Contamination for
Organochlorine Pesticides (DDE, DDT, and
Chlordane) 0-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







SSA-2a

SSA-4

SSA-5a

SSA-1b

Upper Derby Lake

SSA-2a

SSA-1c

Lower Derby Lake

SSA-1a

Upper Derby Lake

SSA-3b

Red and Sub Club Pond

SSA-1d

SSA-5d

SSA-5c

SSA-5e

12

7

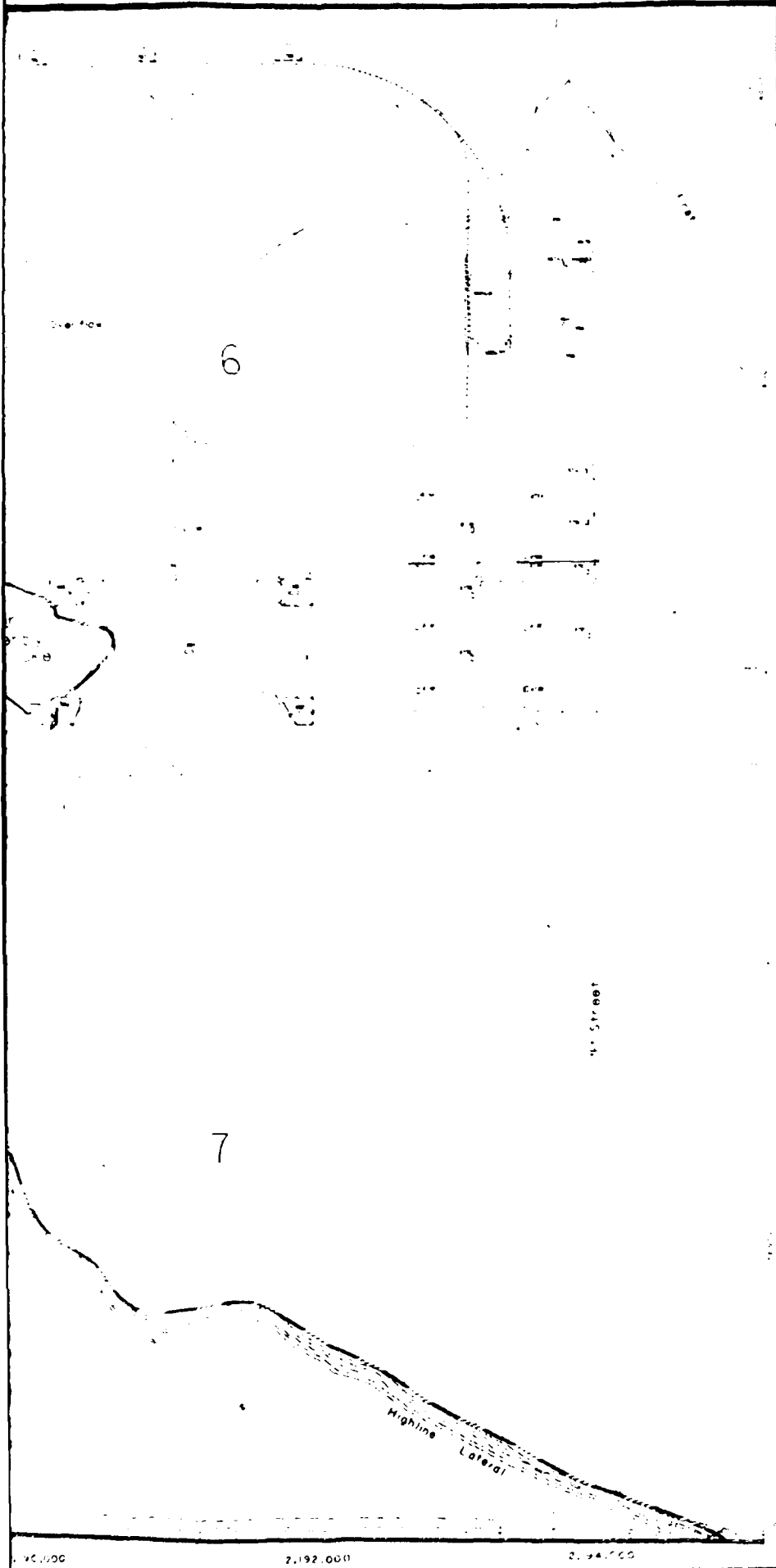
2,184,000

2,186,000

2,188,000

2,190,000

2,192,000



LEGEND

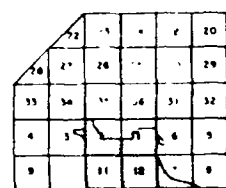
- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

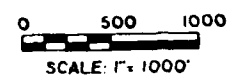


Extent of Potential Contamination in Soils and Sediments
Widths less than 50 feet and diameters less than 75 feet, not shown to scale.

ROCKY MOUNTAIN ARSENAL



17.5 MILES

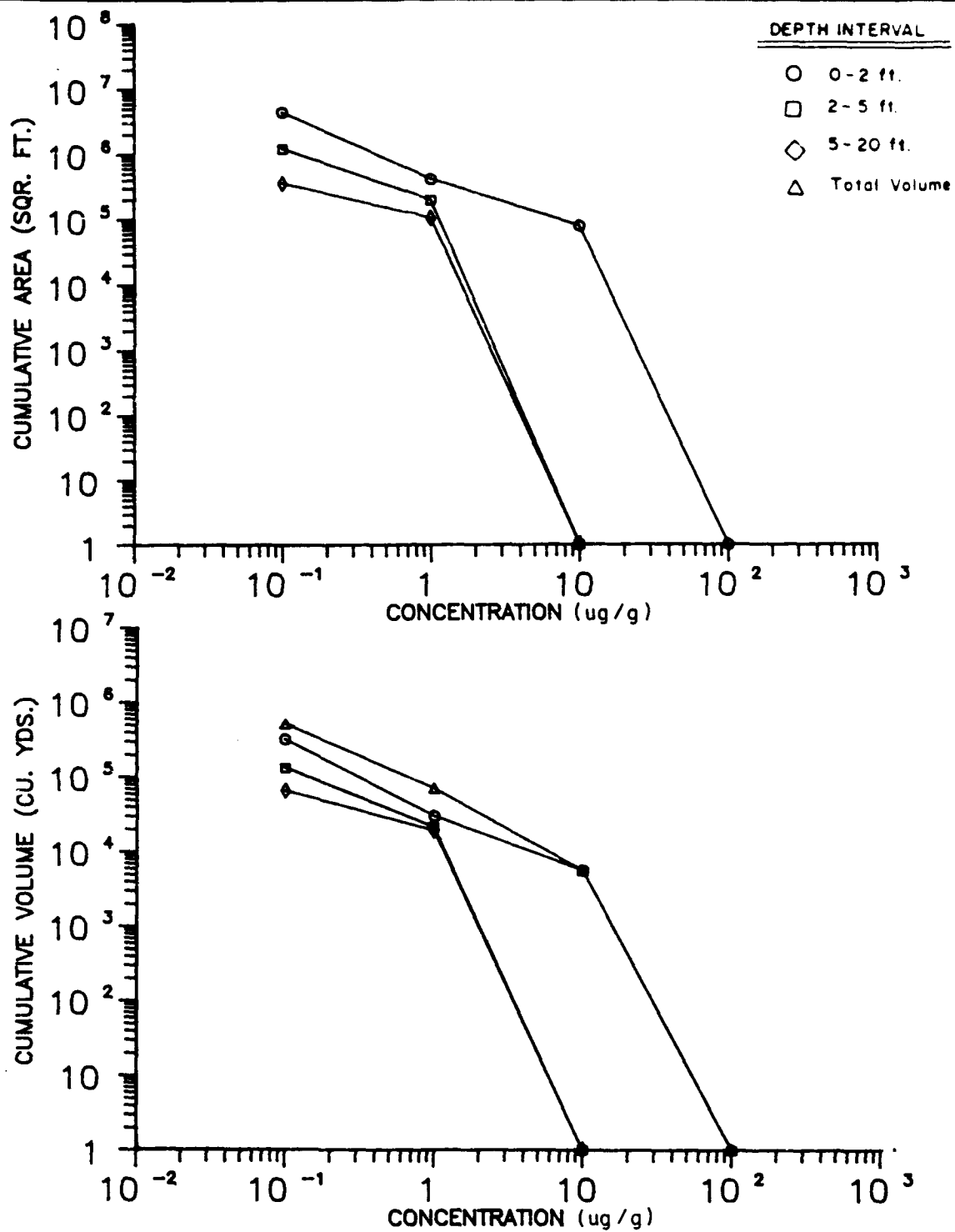


Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE SSA 3.4-14
Estimated Areal Extent of
Potential Contamination for Arsenic,
0-5 ft. Depth Interval
Rocky Mountain Arsenal

Prepared by:
Ebasco Services Incorporated



Prepared for:

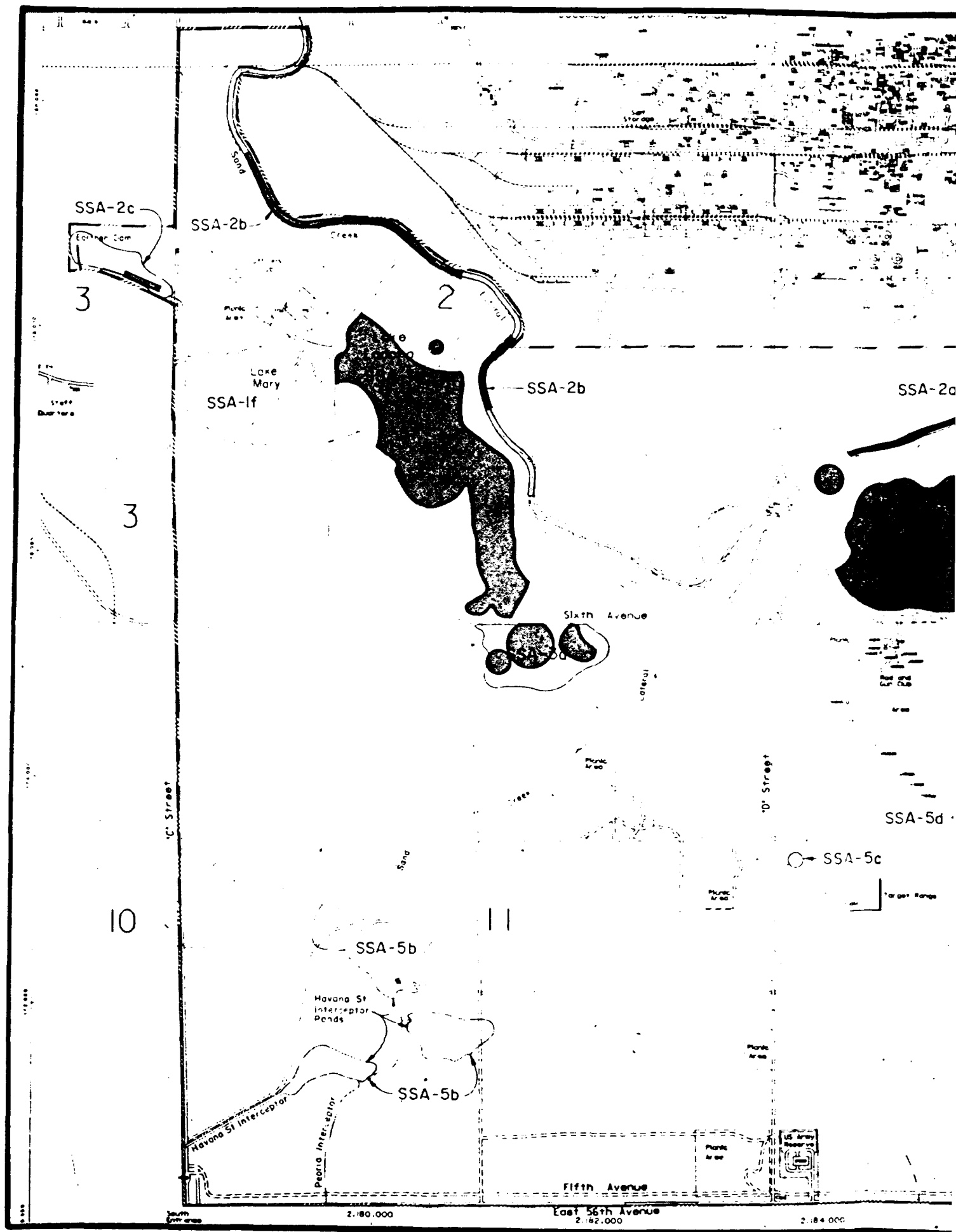
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

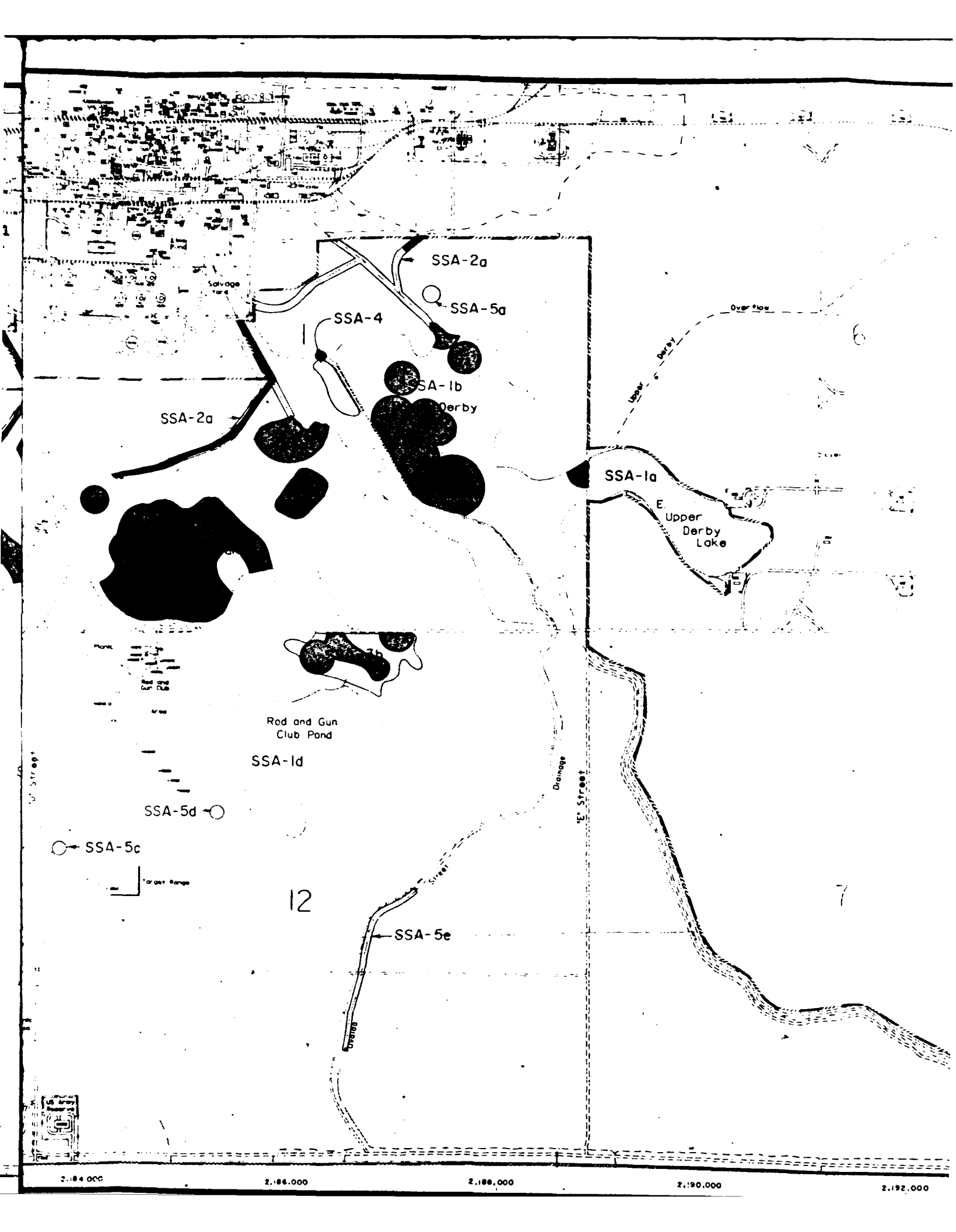
FIGURE SSA 3.4-15

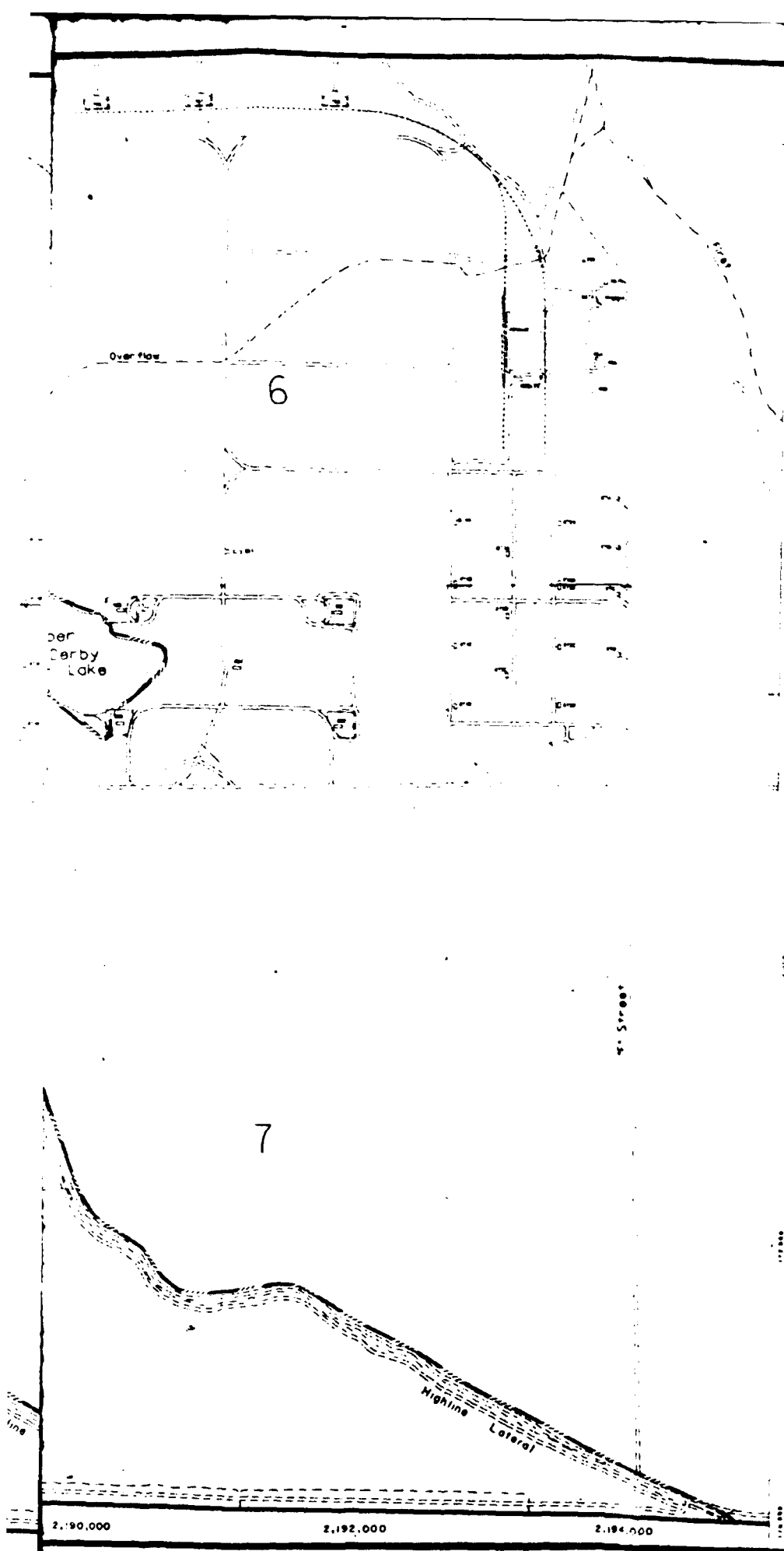
Cumulative Area and Volume of
Potentially Contaminated Soil for
Mercury

Rocky Mountain Arsenal

Prepared by: Ebasco Services Incorporated







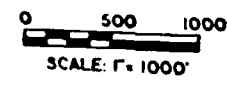
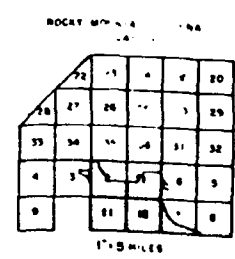
LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- 6 Section Number
- Stream or Ditch
- Study Area Boundary

174,000 State Plane Grid

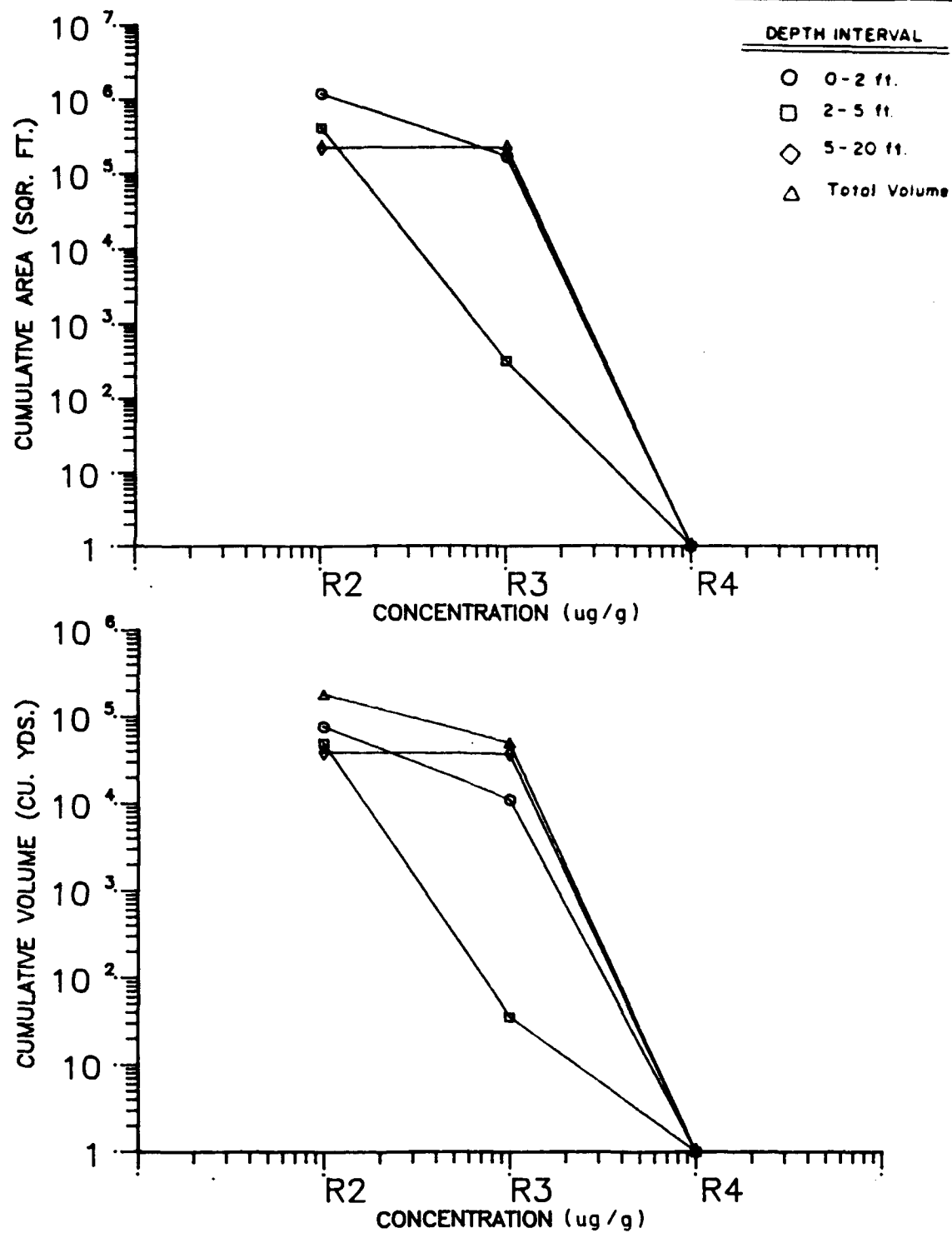


Extent of Potential Contamination in Soils and Sediments
Widths less than 50 feet and diameters less than 75 feet, not shown to scale.



Prepared for:
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-16
Estimated Areal Extent of
Potential Contamination for Mercury,
0-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



Prepared for:

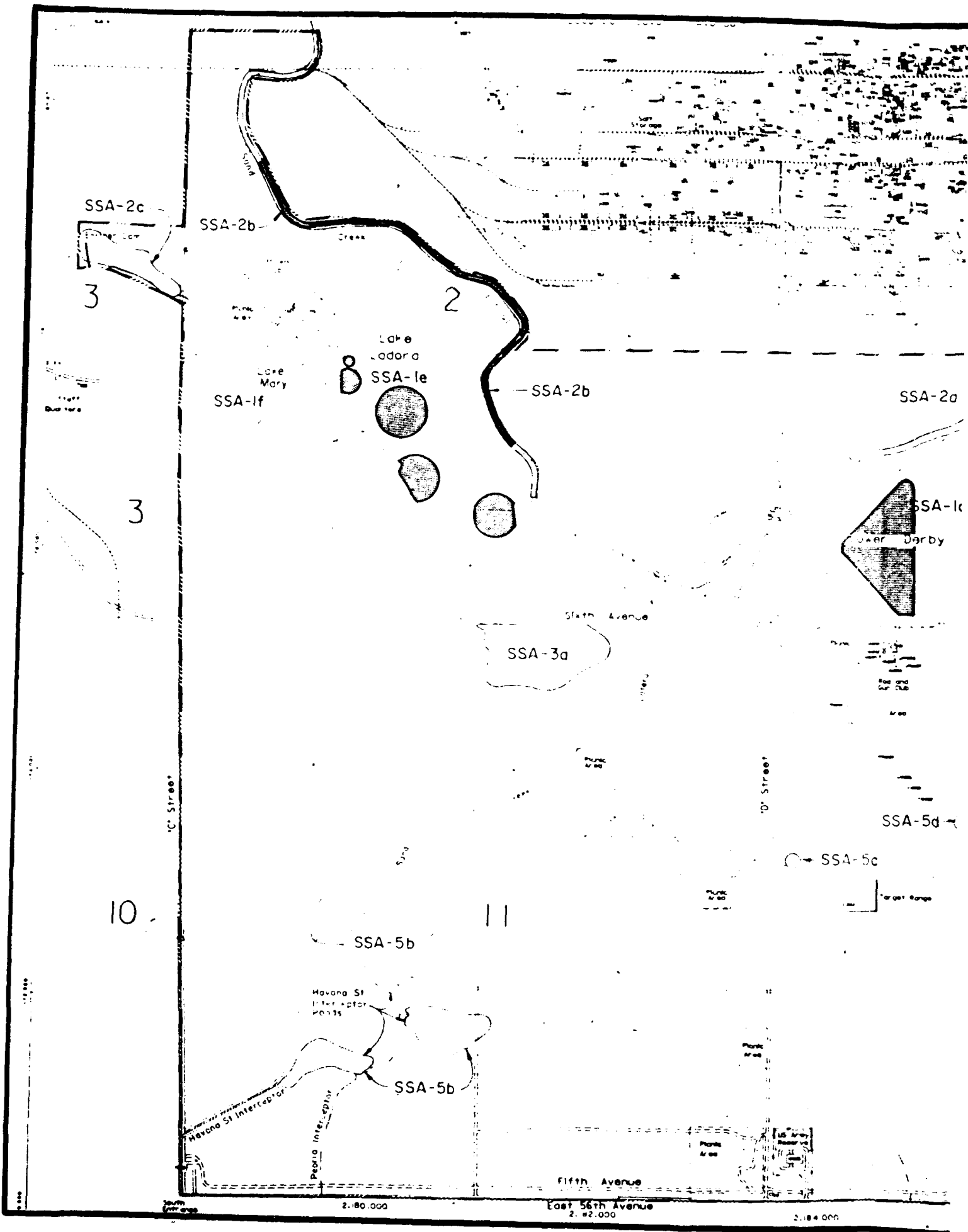
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Aberdeen Proving Ground, Maryland

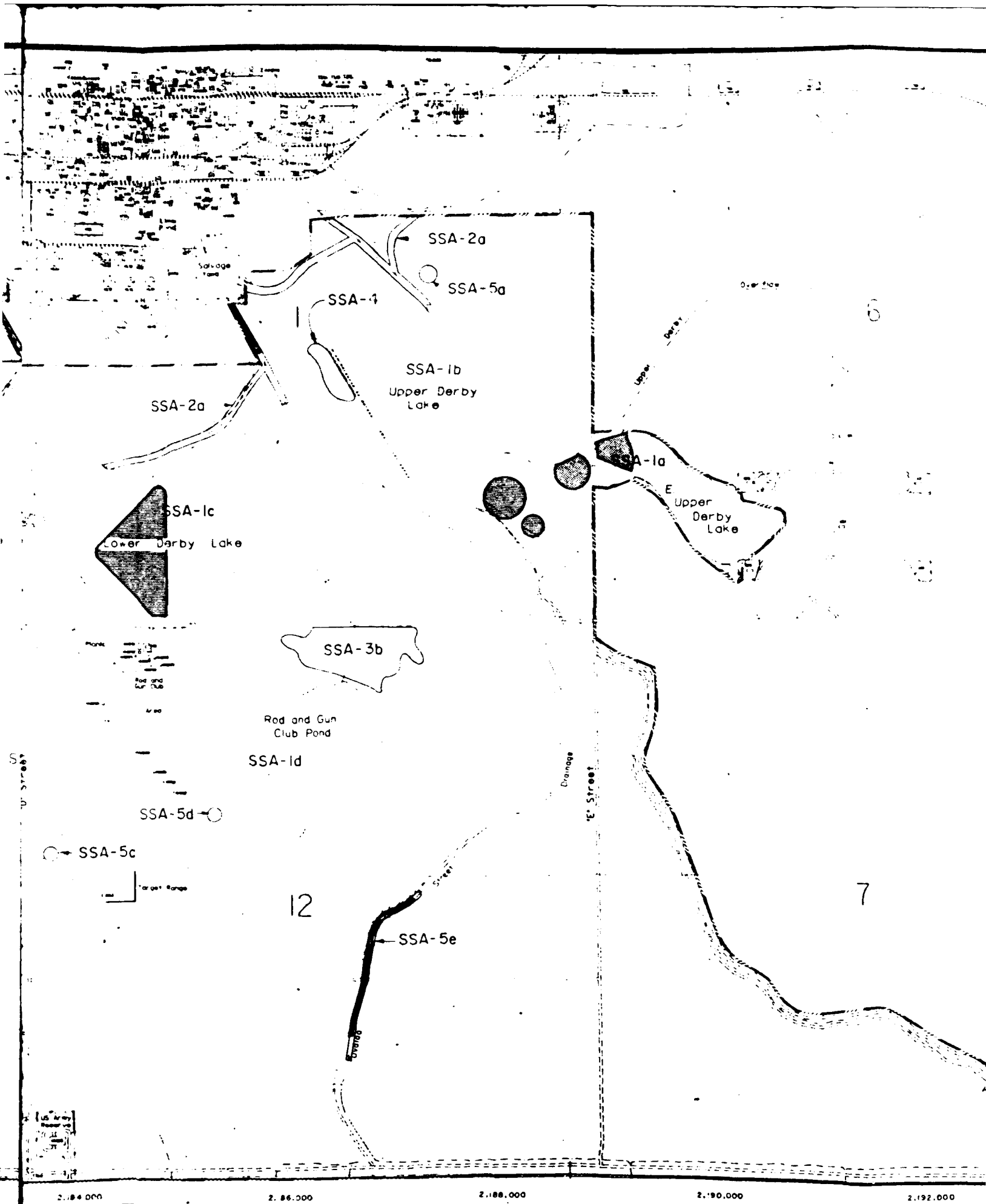
FIGURE SSA 3.4-17

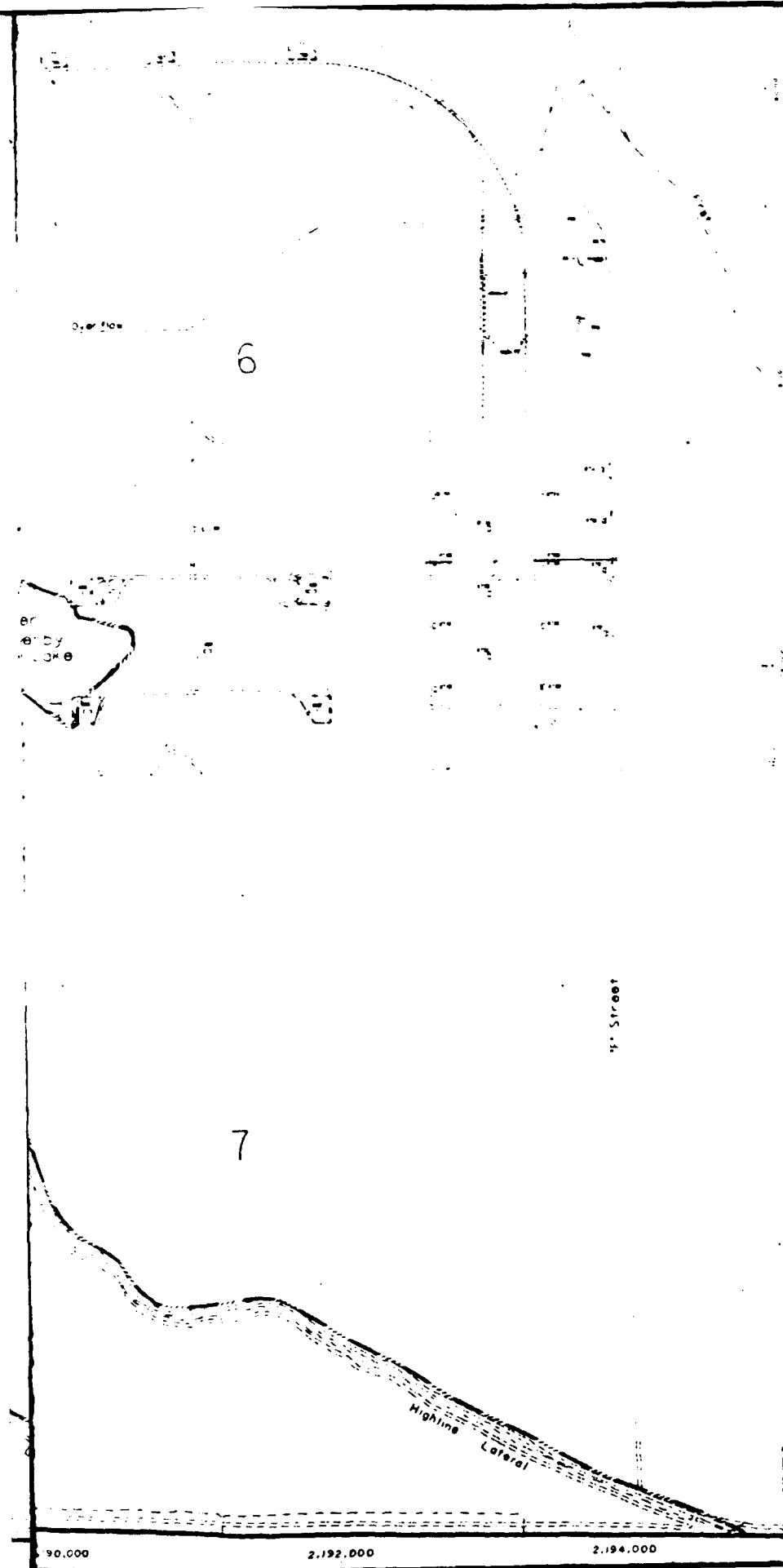
Cumulative Area and Volume of
Potentially Contaminated Soil for
ICP Metals

Rocky Mountain Arsenal,

Prepared by: Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- - - Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6 Section Number
- - - Stream or Ditch
- - - Study Area Boundary

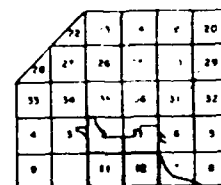
174,000 State Plane Grid



Extent Of Potential Contamination in Soils and Sediments

Widths less Than 50 Feet and Diameters less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



1" = 5 MILES



0 500 1000

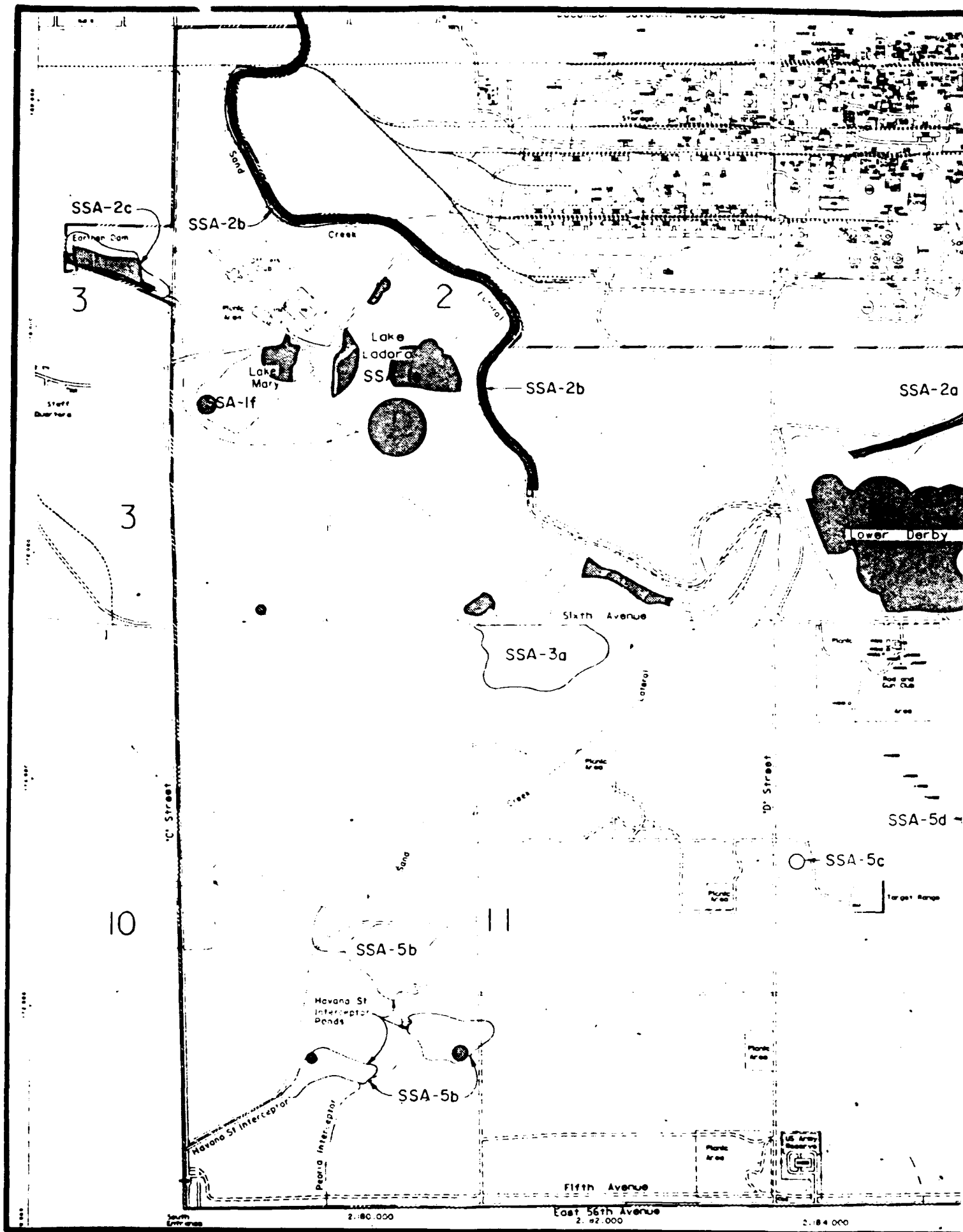
SCALE: 1" = 1000'

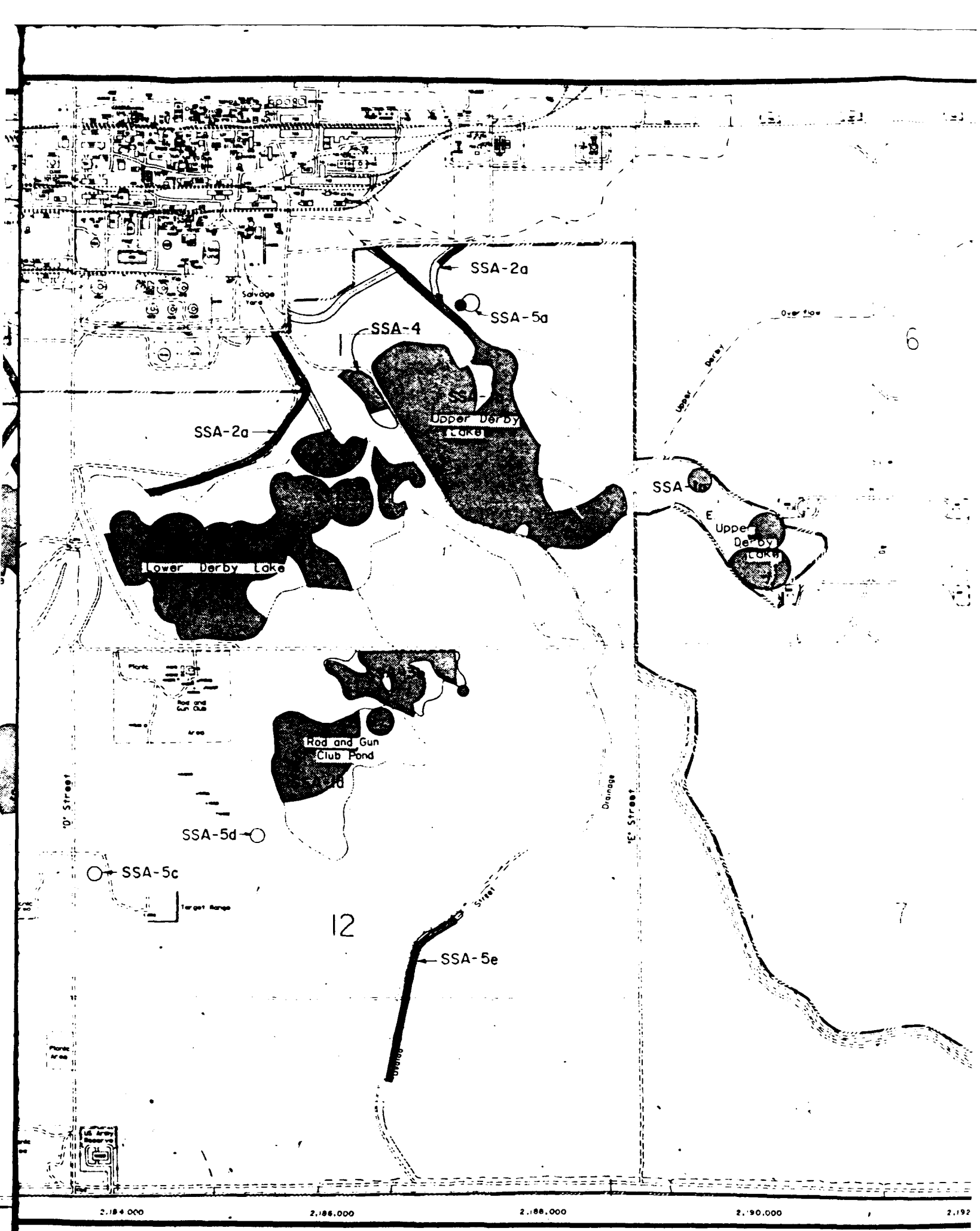
Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-18
Estimated Areal Extent of Potential Contamination
for ICP Metals, 0-5 ft. Depth Interval

Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated

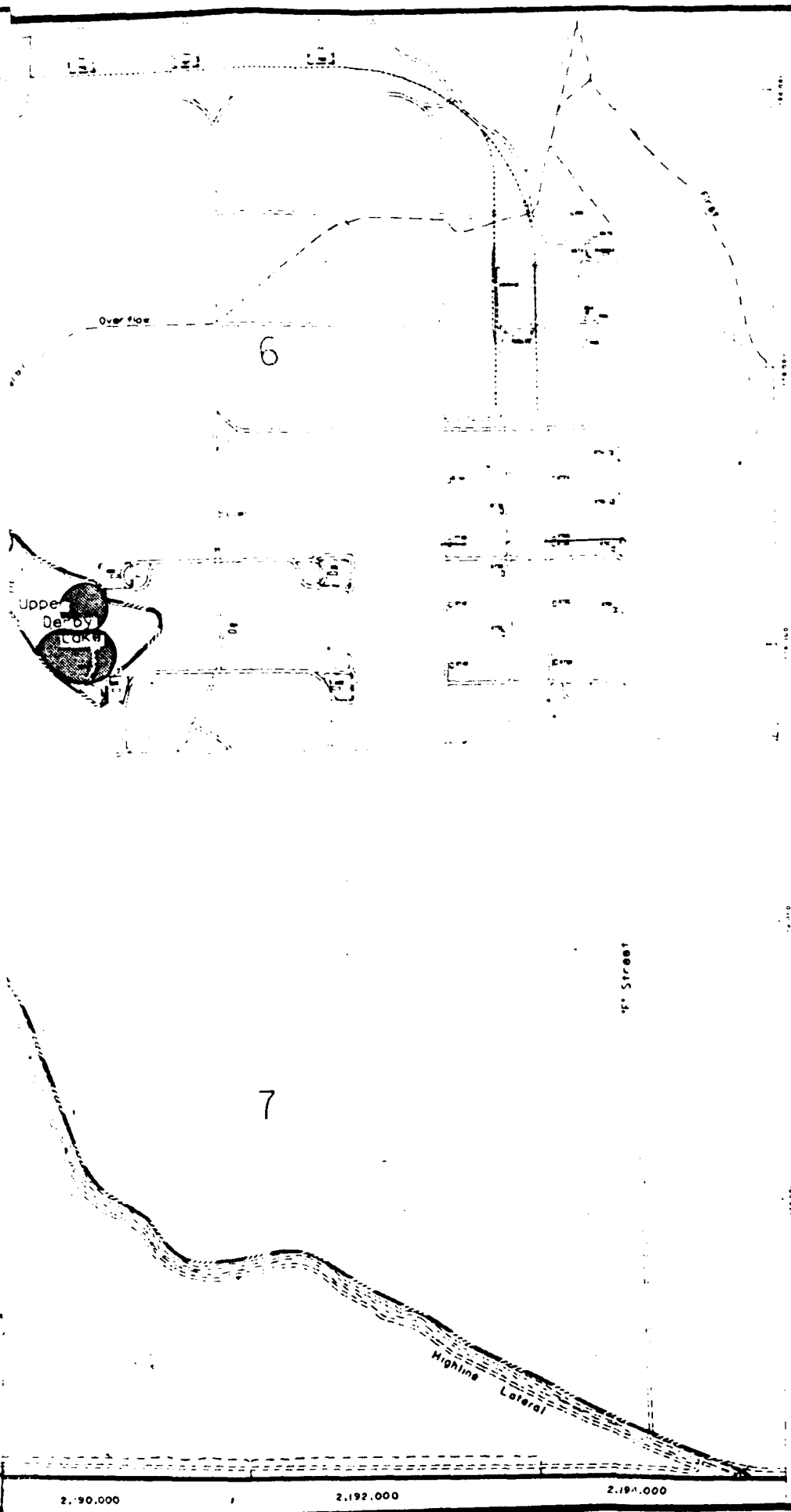




6

7

12



LEGEND

- Improved Road
- - - Unimproved Road
- - - Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary

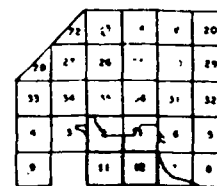
1"=4,000 State Plane Grid



Extent Of Potential Contamination
In Soils and Sediments

Widths less Than 50 Feet and Diameters
less Than 75 Feet, Not Shown To Scale

ROCKY MOUNTAIN ARSENAL



1"=5 MILES



0 500 1000

SCALE: 1"=1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

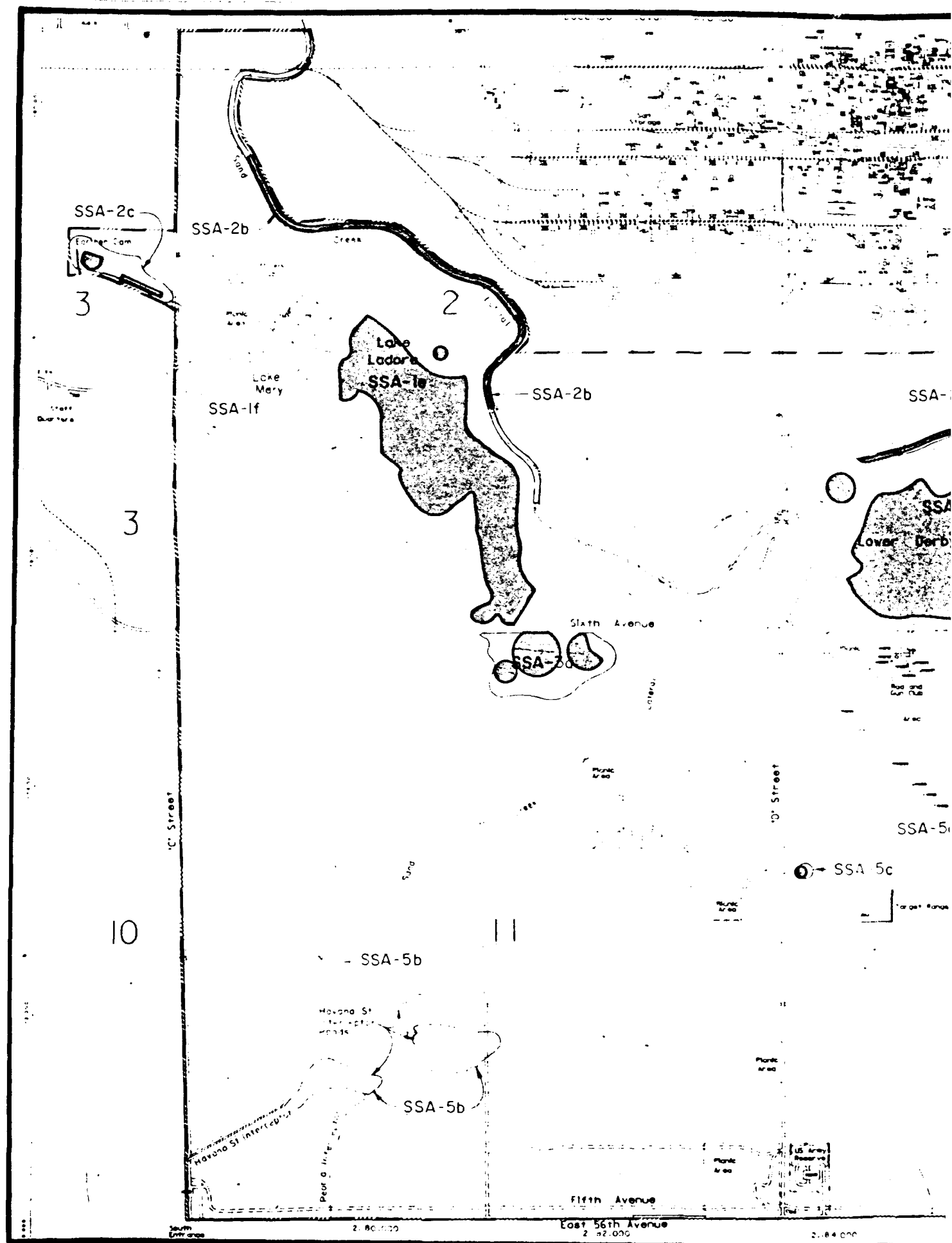
FIGURE: SSA 3.4-19

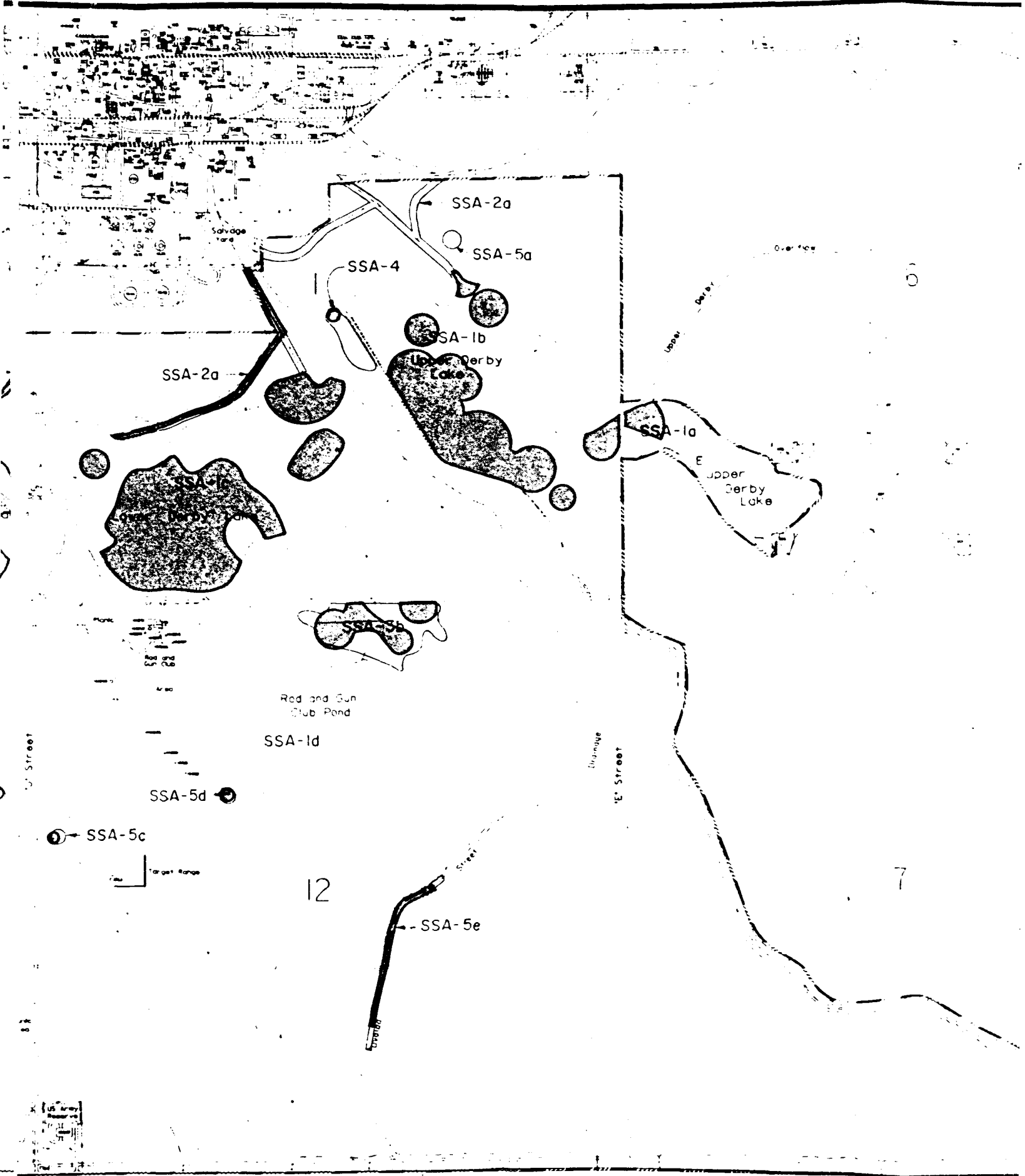
Estimated Areal Extent of Potential Contamination
for Total Organics, 0-5 ft. Depth Interval

Rocky Mountain Arsenal

Prepared by:

Ebasco Services Incorporated





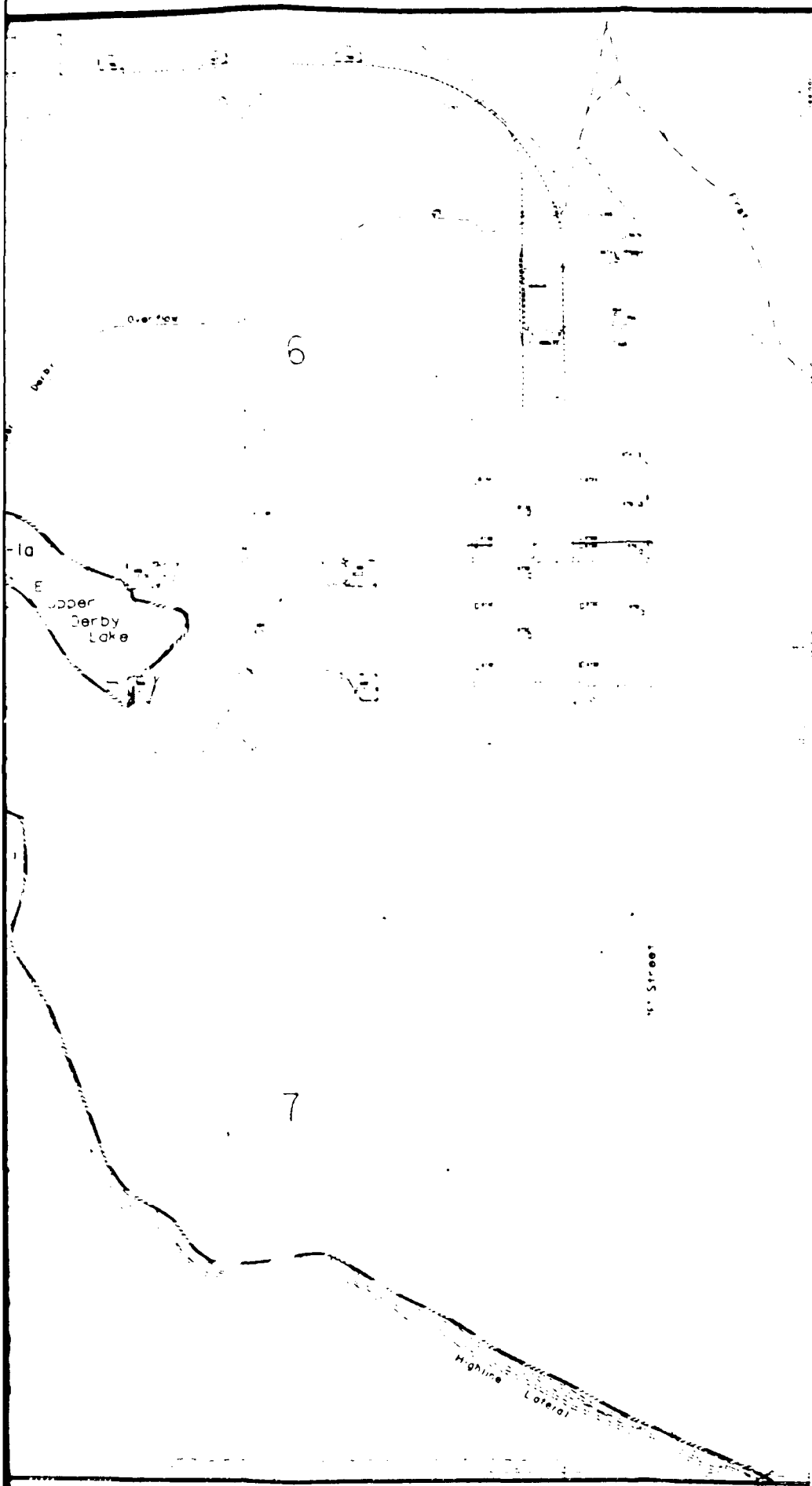
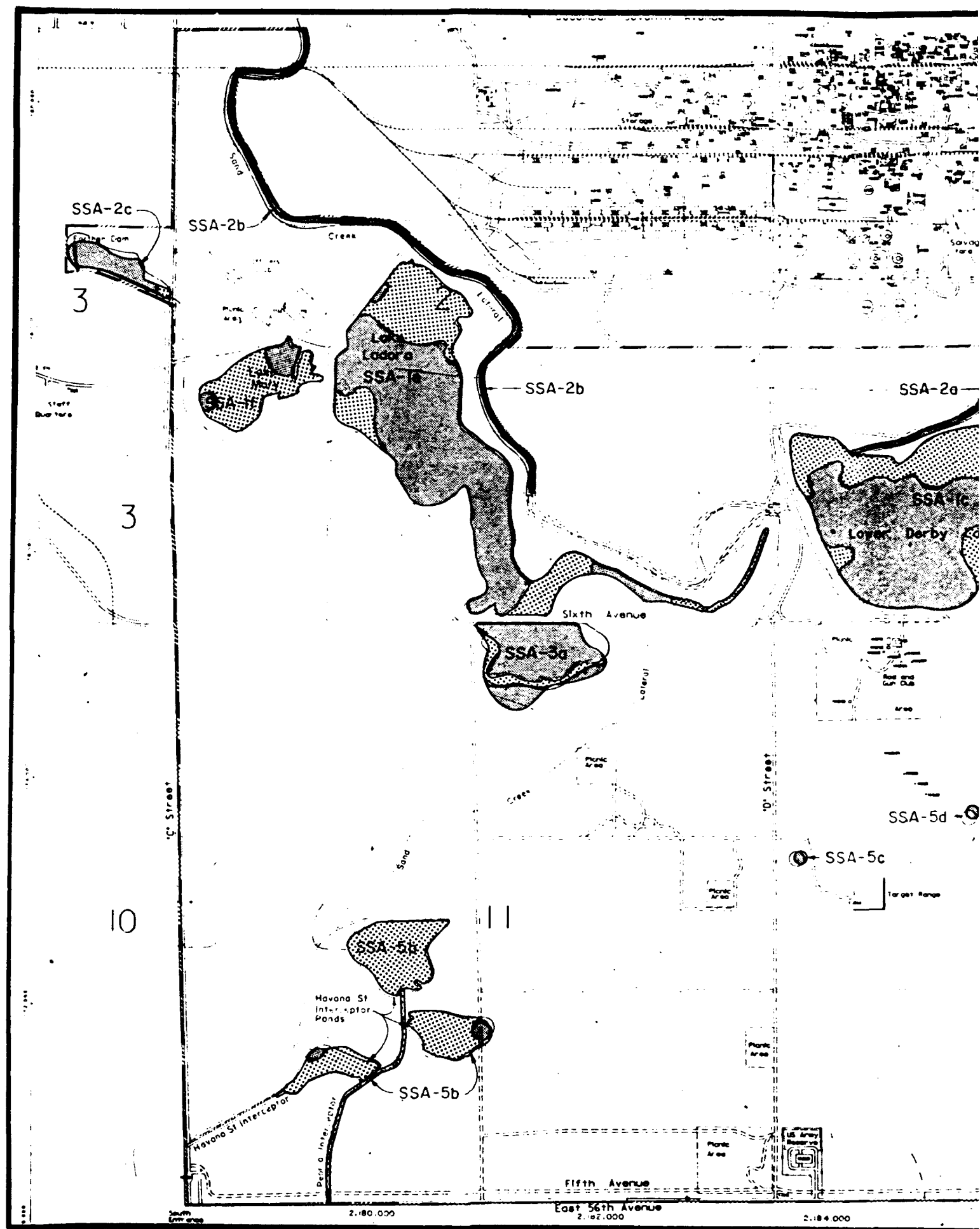
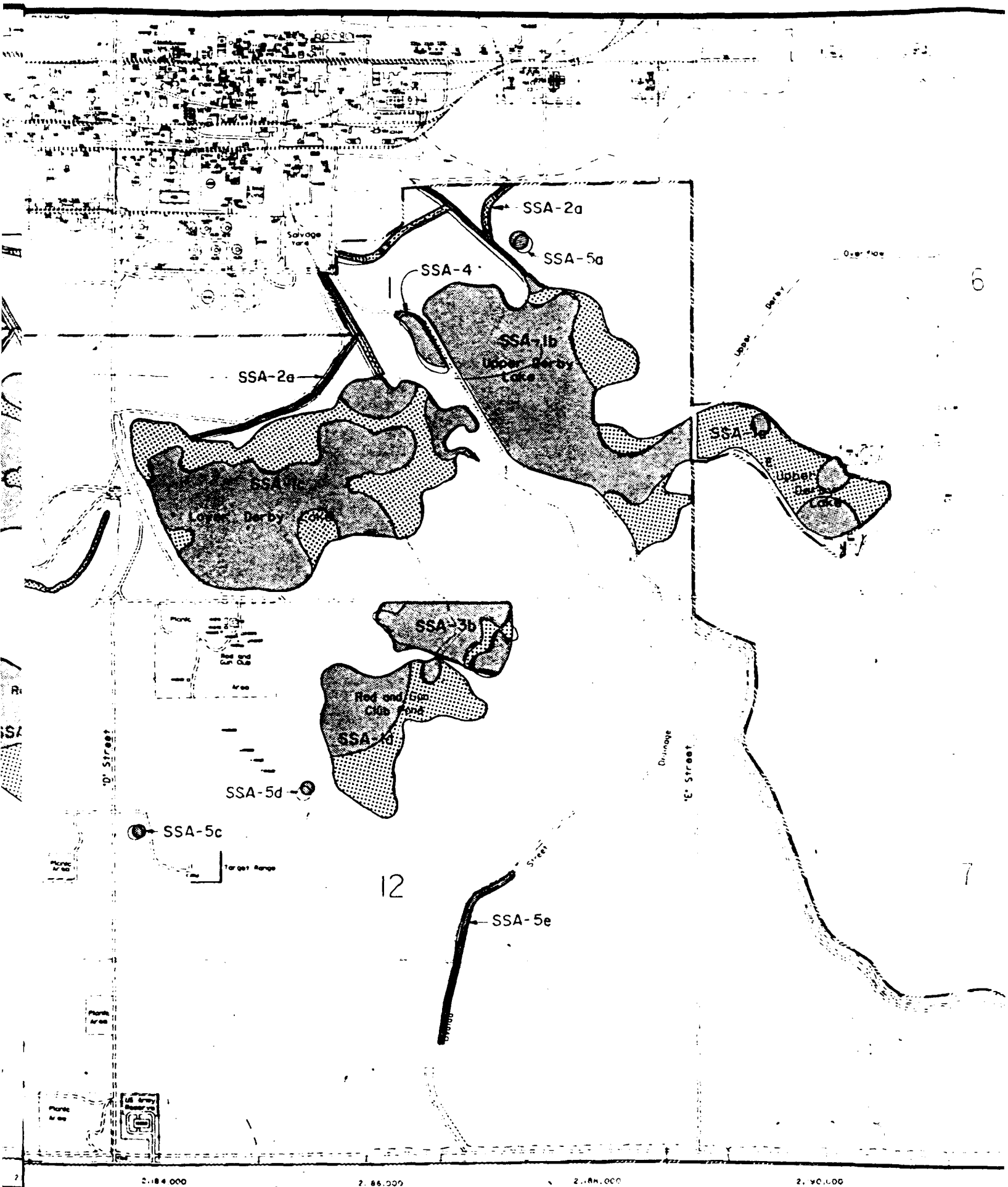
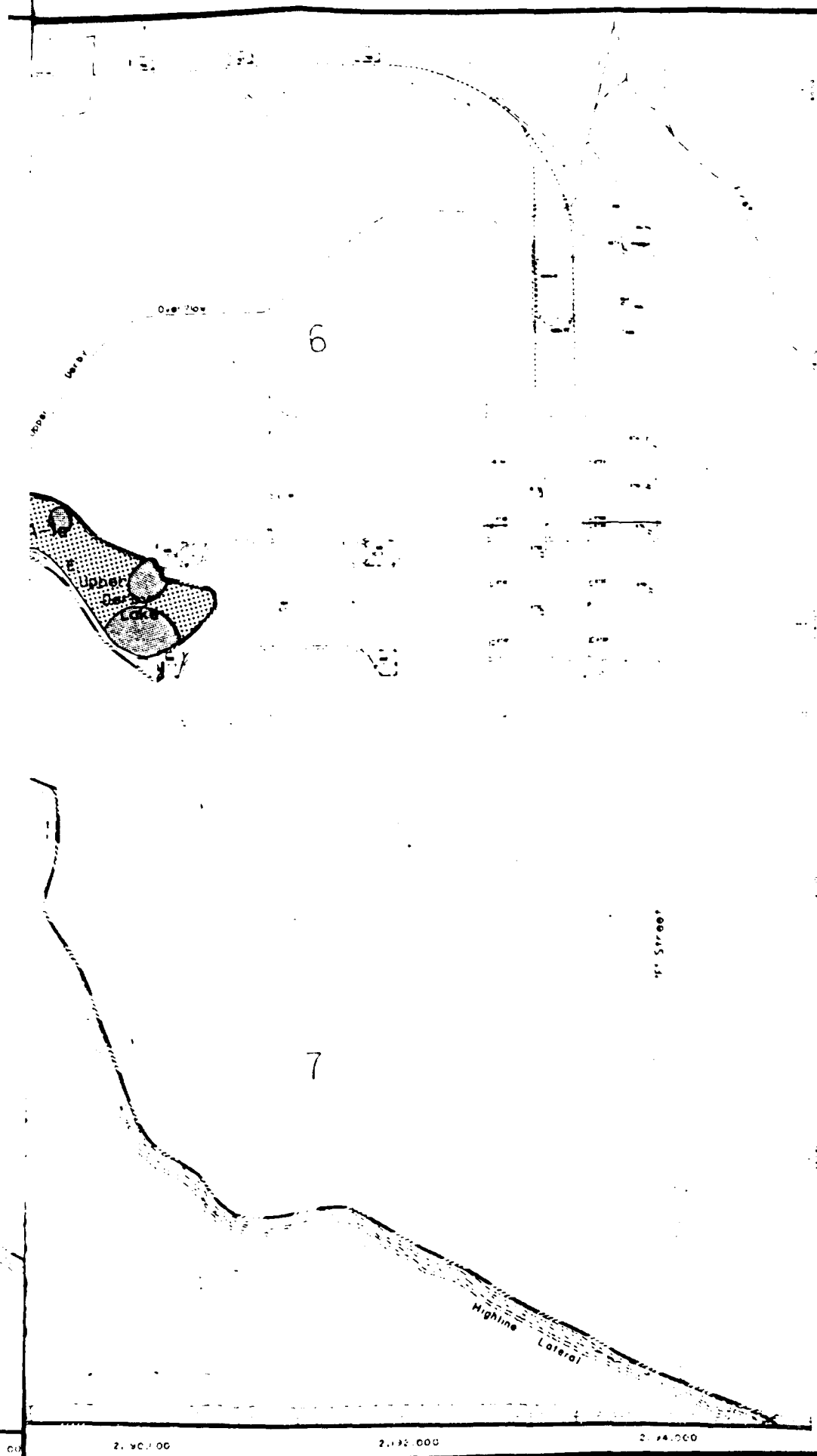


FIGURE: SSA 3.4-20
Estimated Areal Extent of Potential
Contamination for Total Inorganics,
0-5 ft. Depth Interval
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



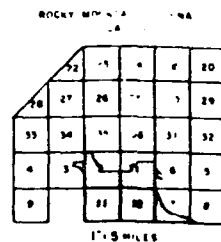




LEGEND

- Improved Road
- - - - - Unimproved Road
- - - - - Railroad Tracks
- - - - - Existing Structure
- - - - - Former Structure
- - - - - Fence
- 6 Section Number
- - - - - Stream or Ditch
- - - - - Study Area Boundary
- 174,000 State Plane Grid

- Total area of potential contaminants in soils based on historical information, and distribution mechanisms
- Total area of detected contaminants in soils of all depths based on analytical results

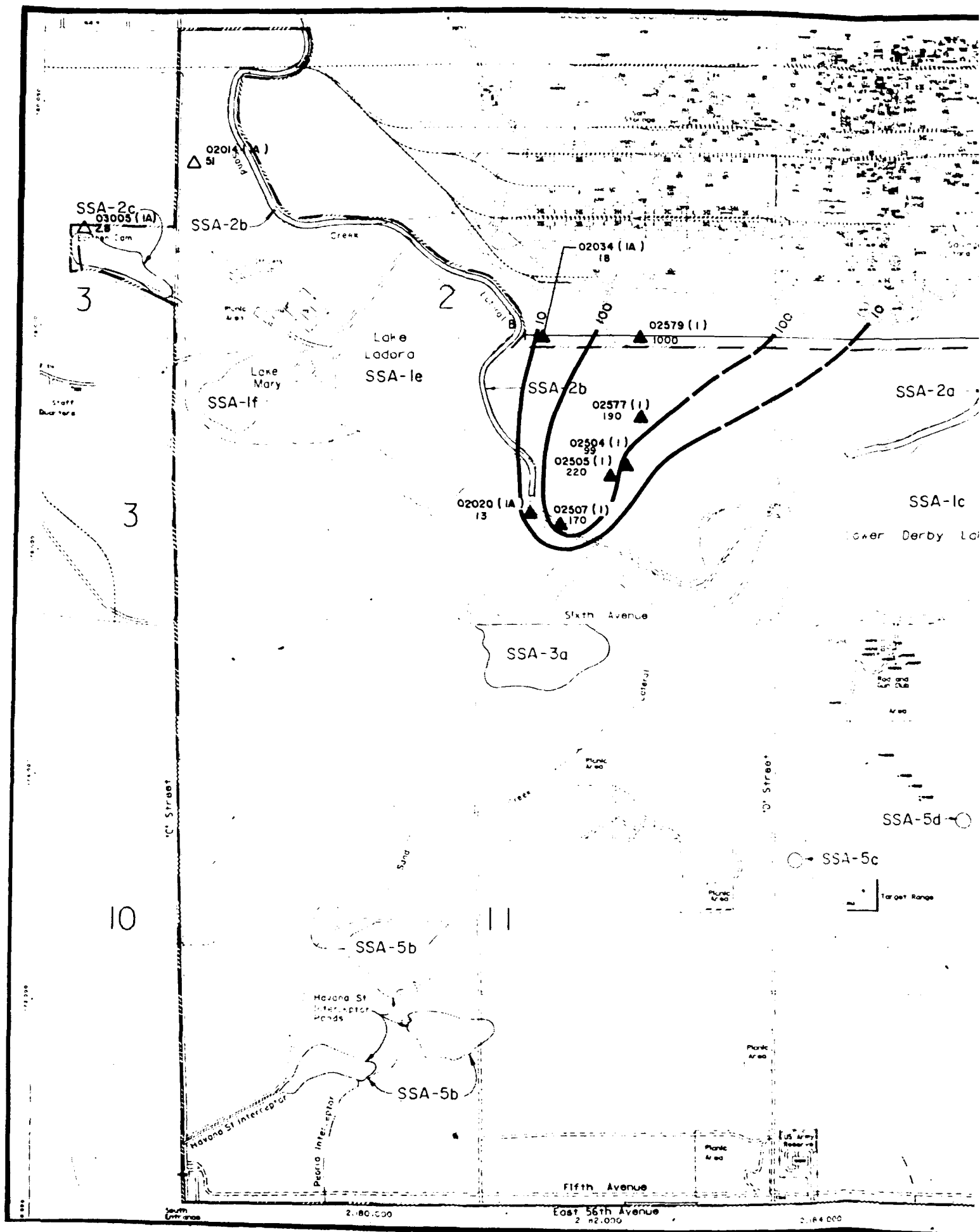


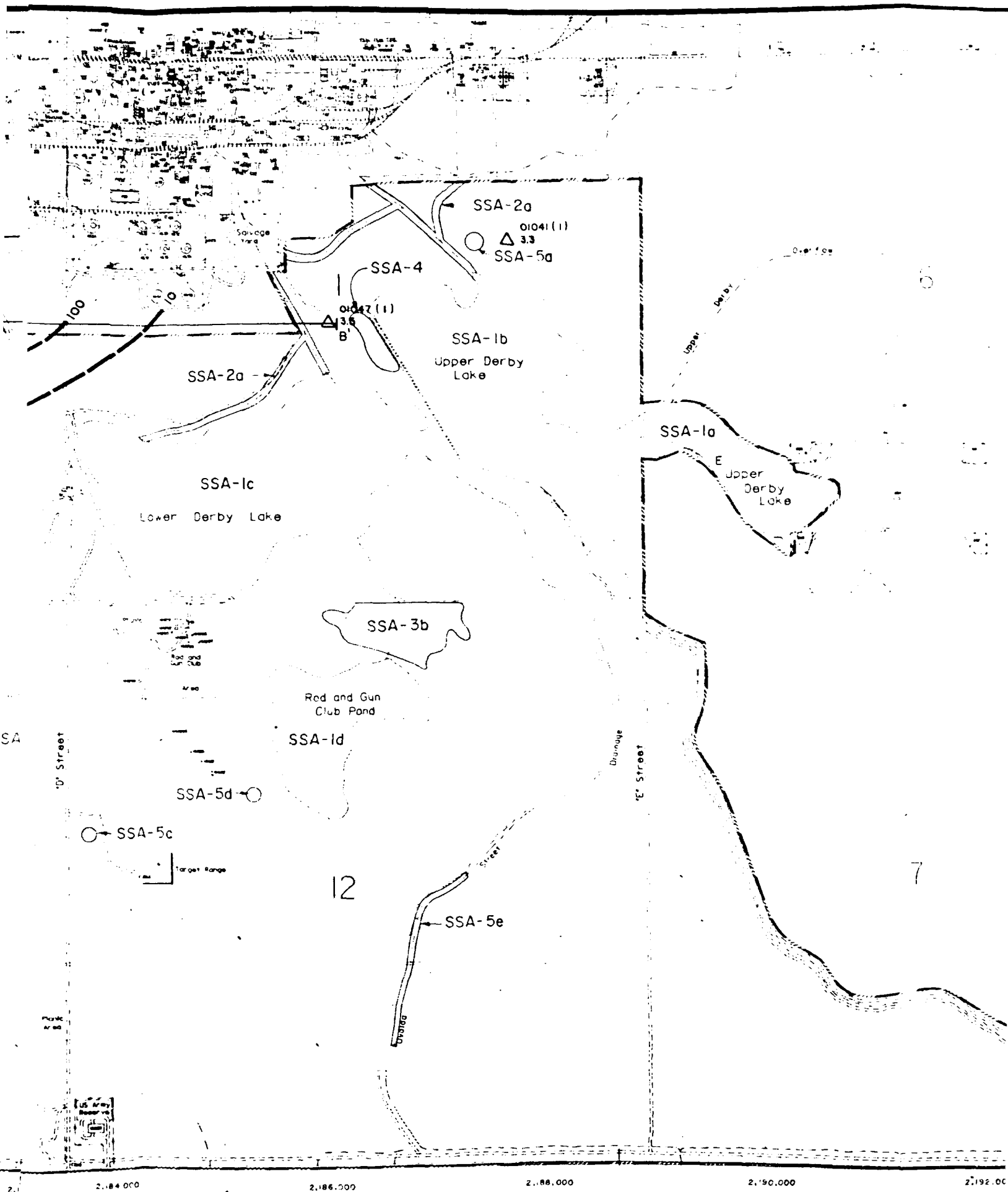
0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.4-21
Total Area of Potential Contaminants in Soils
Based on Analytical Results, Historical
Information, and Distribution Mechanisms
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated







LEGEND

- Improved Road
- - - Unimproved Road
- Railroad Tracks
- - - Existing Structure
- - - Former Structure
- - - Fence
- 6** Section Number
- - - Stream or Ditch
- - - Study Area Boundary

174,000 State Plane Grid

- ▲ 02579(i) Well (Water Bearing Zone)
1000 Detection in micrograms per liter (ug/l)
- △ 02014(iA)
3.0 Isolated Detection in micrograms per liter (ug/l)

Equipconcentration Line,
Concentration in (ug/l)
(Dashed Where Inferred)

B B'
Cross-section Location

Notes:
All data from Morrison Knudsen
Engineers, (1988) and,
Environmental Science and
Engineering, (1987)

ROCKY MOUNTAIN ARSENAL

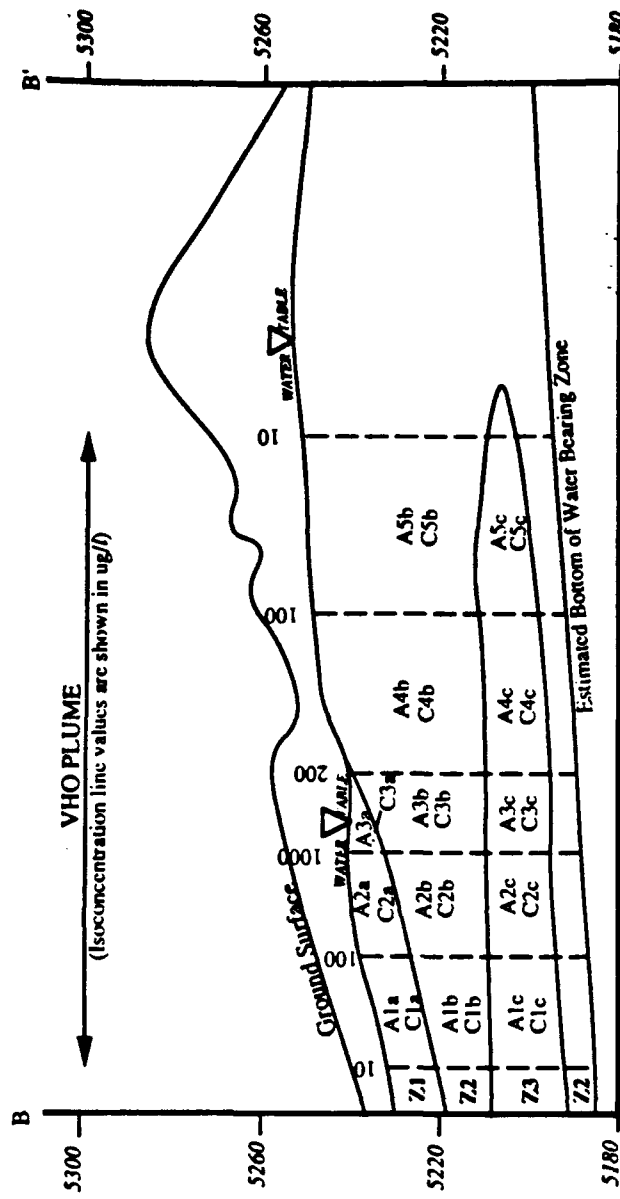


0 500 1000
SCALE: 1" = 1000'

Prepared for:

Program Manager's Office for
Rocky Mountain Arsenal Cleanup

FIGURE: SSA 3.5-1
Volatile Halogenated Organics
Plume in Water Bearing Zones IA & I
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



APPROXIMATE HORIZONTAL SCALE: 1" = 800'
APPROXIMATE VERTICAL SCALE: 1" = 40'
NOTE: Vertical dimension in feet msl.

TOTAL AREA OF SATURATED ALLUVIUM = A = 138,520 sq ft

AVERAGE HYDRAULIC CONDUCTIVITY (Z1) = K1 = 0.02 cm/sec

AVERAGE HYDRAULIC CONDUCTIVITY (Z2) = K2 = 0.001 cm/sec

AVERAGE HYDRAULIC CONDUCTIVITY (Z3) = K3 = 0.008 cm/sec

AVERAGE HYDRAULIC GRADIENT = I = 0.015

CONVERSION FACTORS

(sq ft)(cm/sec) = 21,203 gpd

(gpd/sq ft) = 3.7854 EE-6 cm/day

UNCONFINED ALLUVIAL FLOW RATE = Q = (21,203)(K)(A)(I) = 191,757.3 gpd

CONTAMINANT MASS FLOW RATE = M = (3.7854 EE-6)(Q)(A) C_n A_n ; n = 1,2,...,13 = 183.4 grams/day

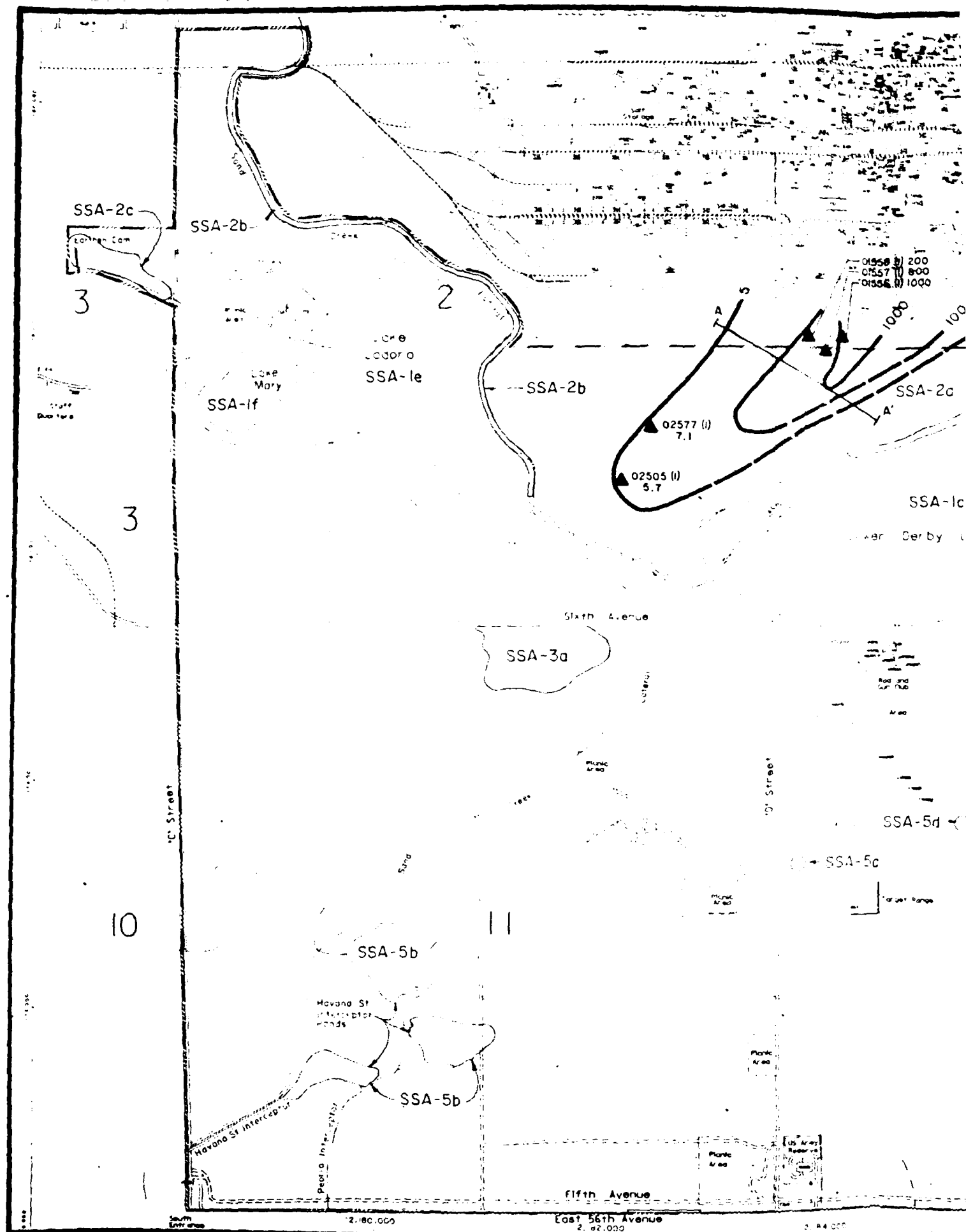
Prepared for:

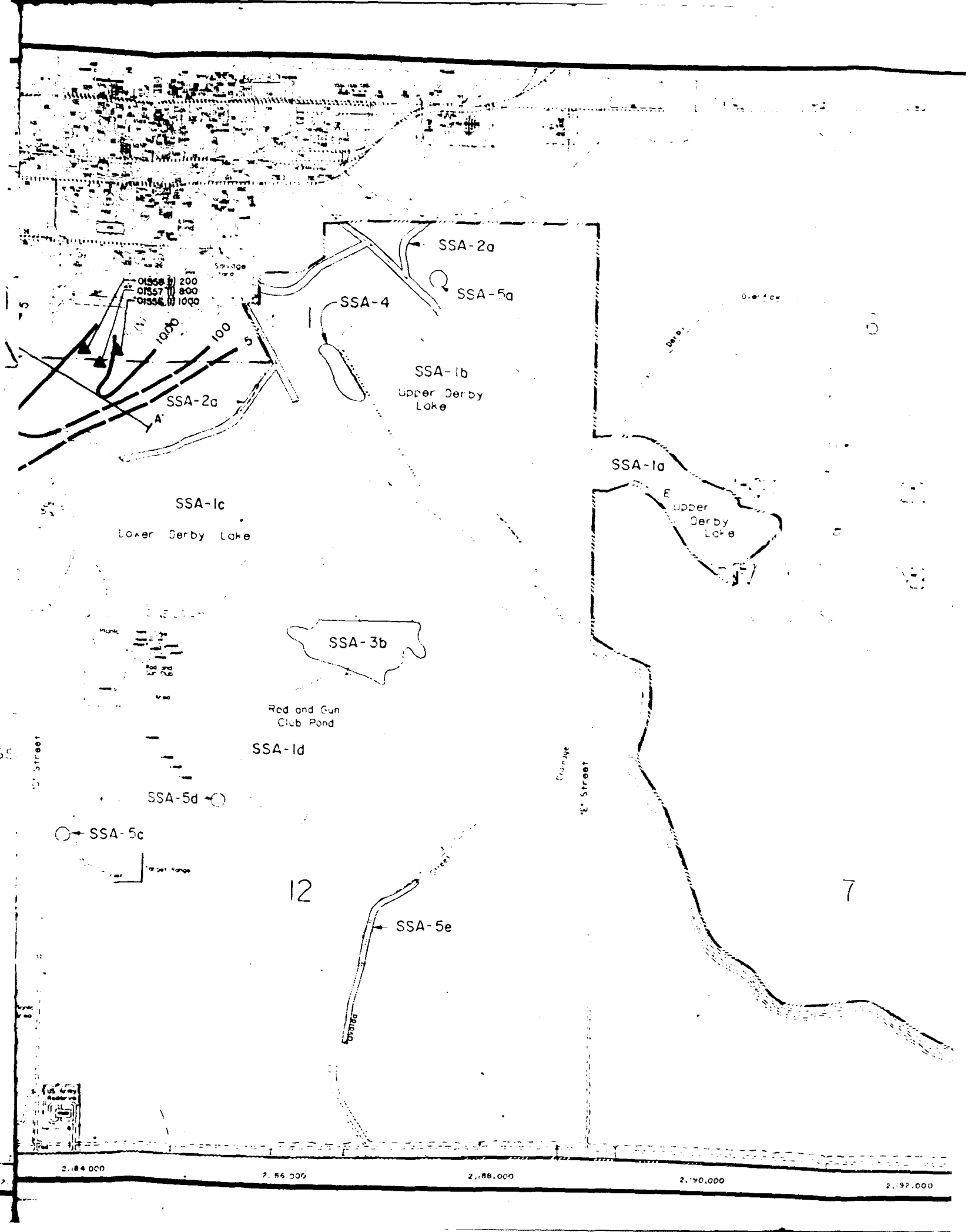
Program Manager's Office for
Rocky Mountain Arsenal Cleanup
Abertsen Proving Ground, Maryland

FIGURE SSA 3.5-2

Contaminant Mass Flow Rate Across Section B-B' of VOLATILE HALOGENATED
ORGANICS PLUME (VHO)

Rocky Mountain Arsenal, BR 53
Prepared by: I-Hesco Services Incorporated 07/JAN/89





01558 200
01557 800
01556 1000

SSA-2a

SSA-5a

SSA-4

SSA-1b
Upper Derby Lake

SSA-2a

SSA-1c

Lower Derby Lake

SSA-3b

Red and Gun
Club Pond

SSA-1d

SSA-5d

SSA-5c

SSA-1a

Upper
Derby
Lake

12

SSA-5e

7

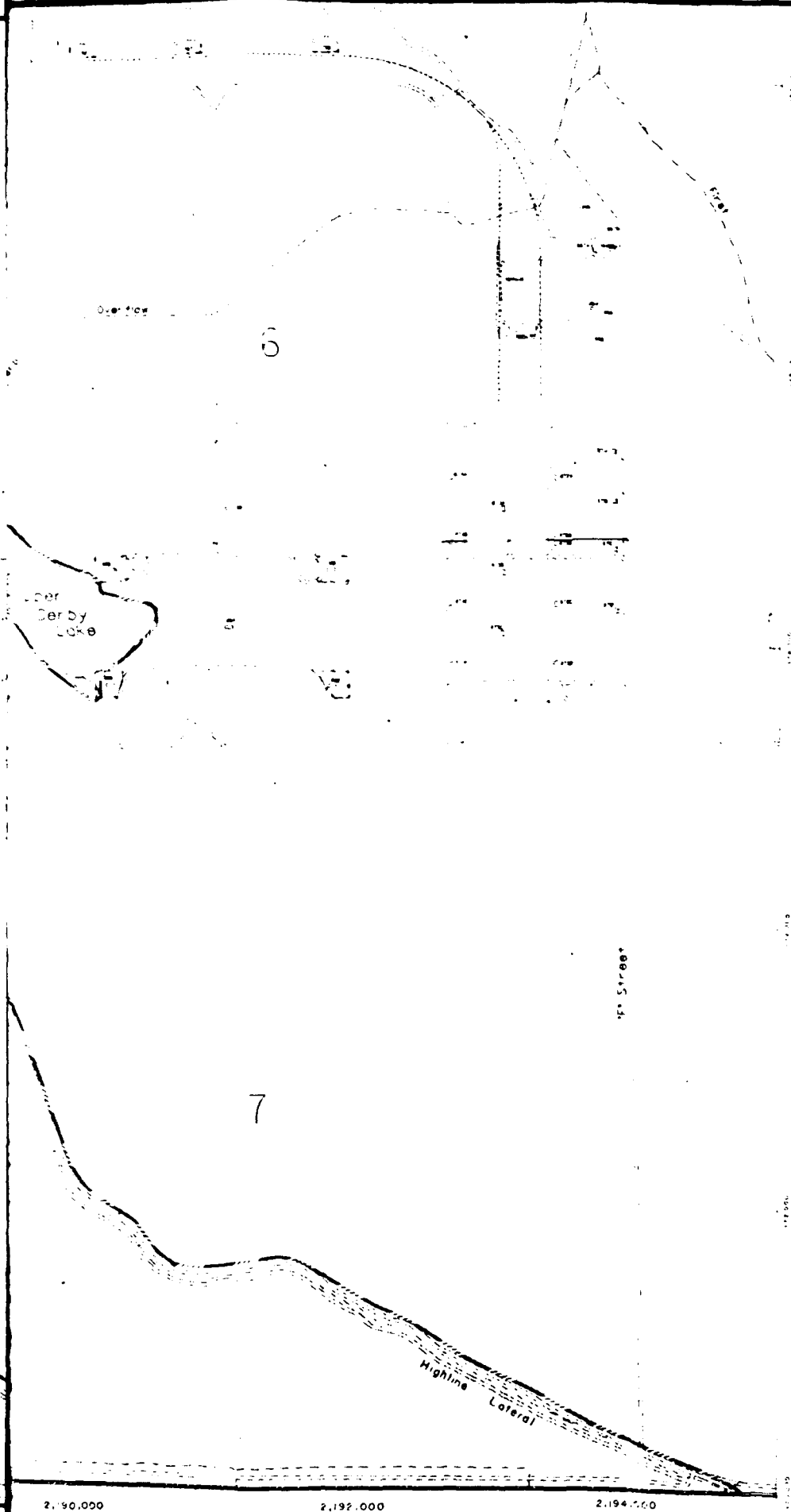
2,184,000

2,185,000

2,186,000

2,190,000

2,192,000



LEGEND

- Improved Road
- Unimproved Road
- Railroad Tracks
- Existing Structure
- Former Structure
- Fence
- Section Number
- Stream or Ditch
- Study Area Boundary

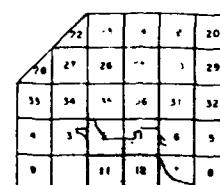
174,000 State Plane Grid

- 02505 (i) Well (Water Bearing Zone) Detection in micrograms per liter (ug/l)
- 0.05 Equal concentration Line, Concentration in micrograms per liter (ug/l) (Dashed Where Inferred)

A A' Cross-section Location

Notes:
All data from Morrison Knudsen Engineers, (1988)

ROCKY MOUNTAIN ARSENAL



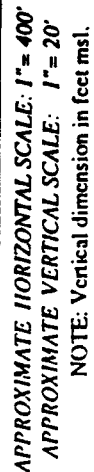
1/4 MILES

0 500 1000
SCALE: 1" = 1000'

Prepared for:

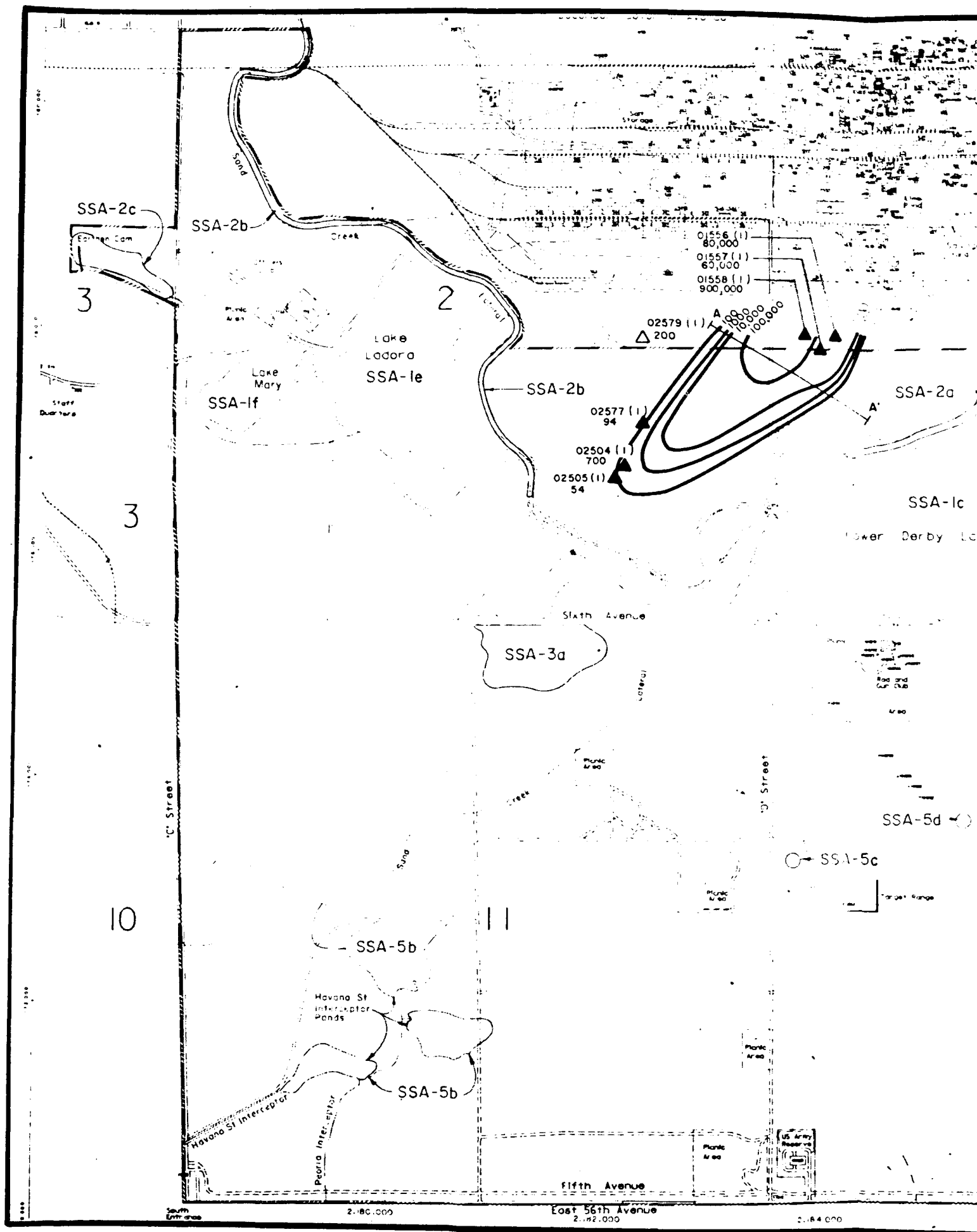
Program Manager's Office for
Rocky Mountain Arsenal Cleanup

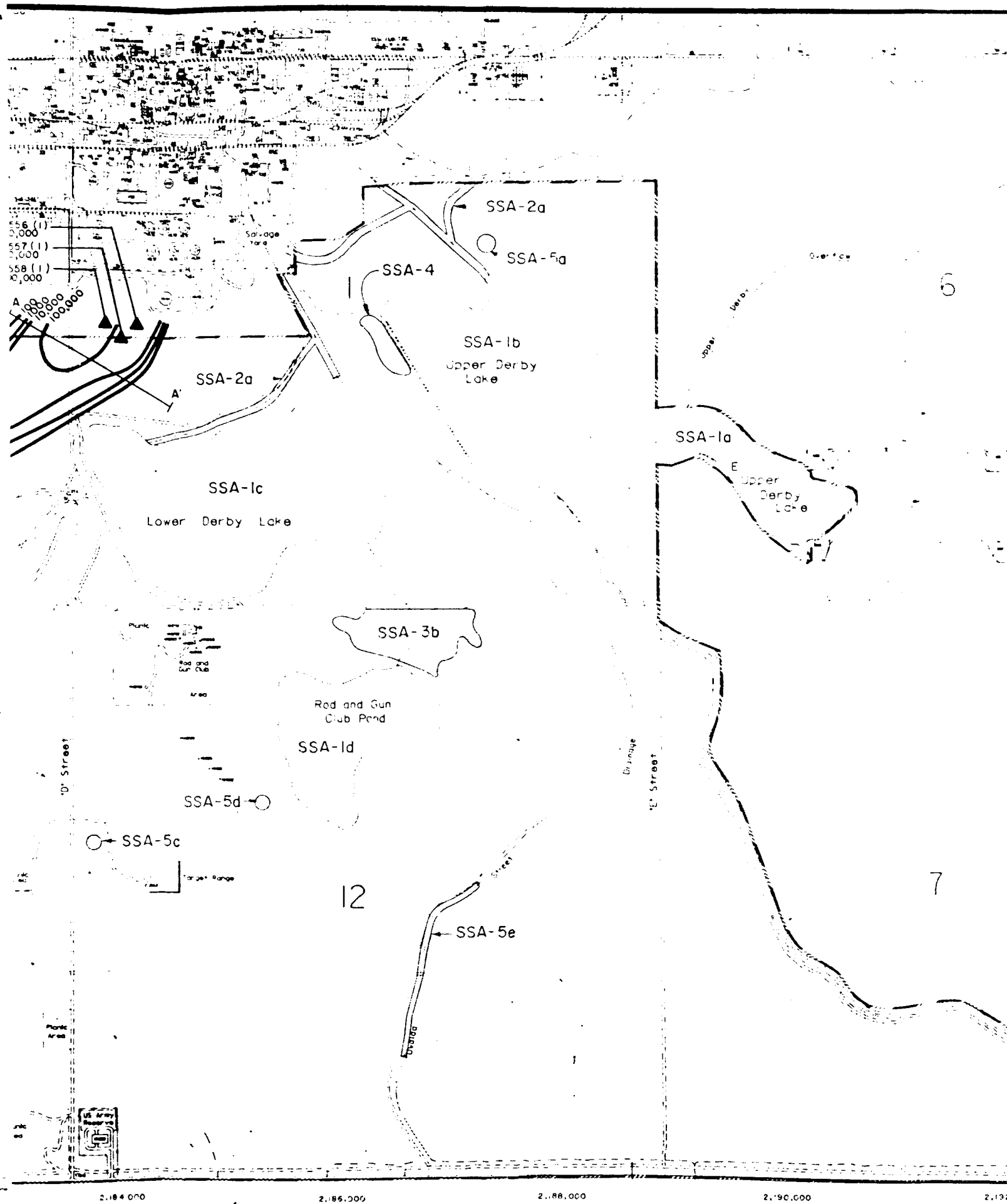
FIGURE: SSA 3.5-3
Volatile Hydrocarbon Plume in
Water Bearing Zones 1A and 1
Rocky Mountain Arsenal
Prepared by:
Ebasco Services Incorporated



CONTAMINANT MASS FLOW RATE = $\mathbf{M} = (3.7854 \text{ EE-6})(Q/A)C_n A_n; n = 1,2,\dots,4 = 8.5 \text{ grams/day}$

Rocky Mountain Arsenal, R 8752
Prepared by: Fasco Services Incorporated -07JAN89

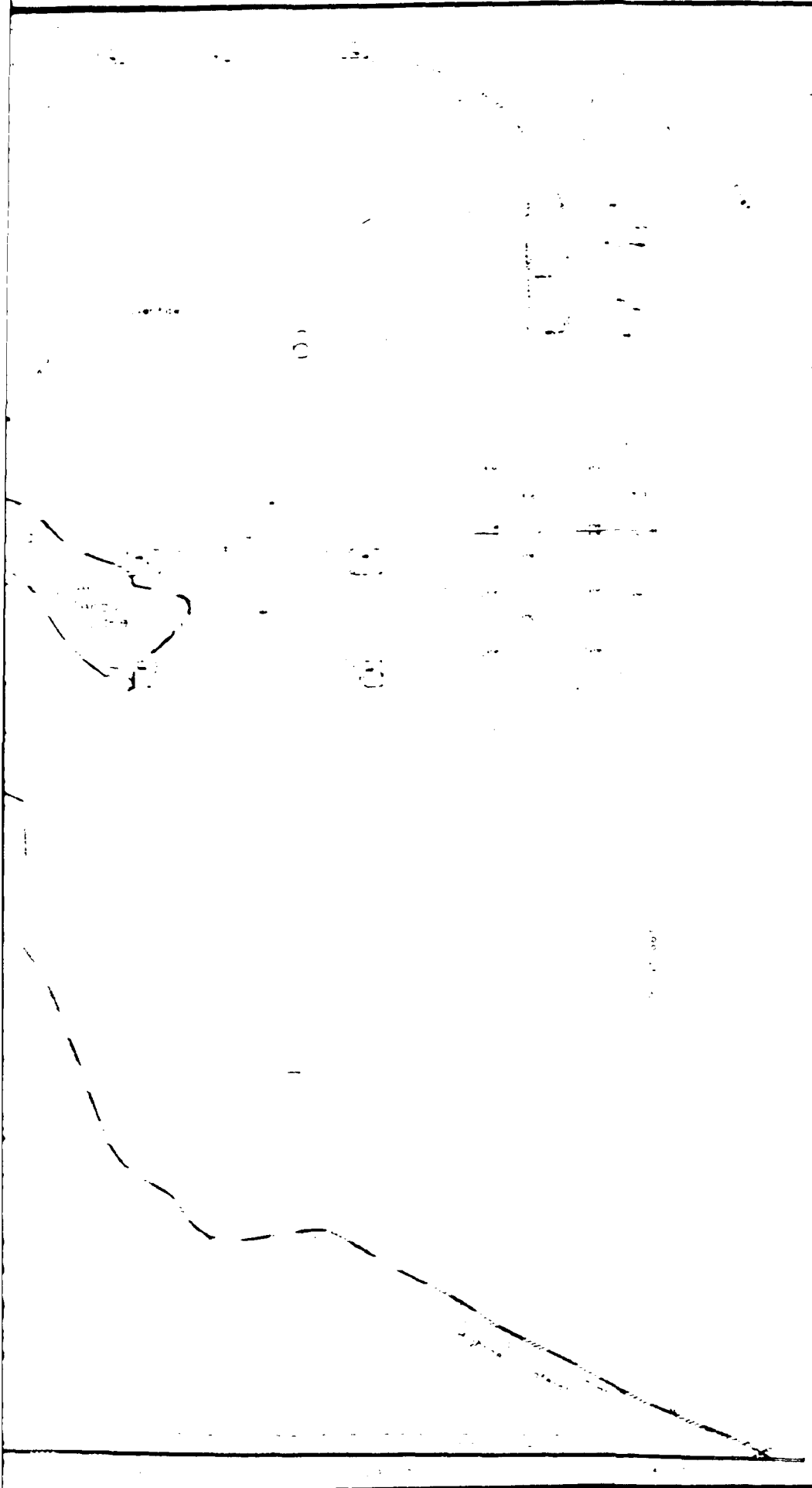




6

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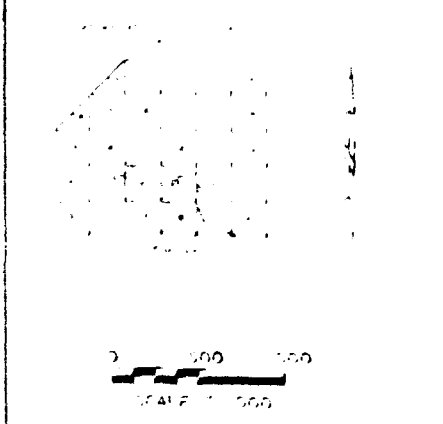
12



1. 1/2" = 100'
 2. 1/4" = 50'
 3. 1/8" = 25'
 4. 1/16" = 12.5'
 5. 1/32" = 6.25'
 6. 1/64" = 3.125'
 7. 1/128" = 1.5625'
 8. 1/256" = 0.78125'
 9. 1/512" = 0.390625'
 10. 1/1024" = 0.1953125'
 11. 1/2048" = 0.09765625'
 12. 1/4096" = 0.048828125'
 13. 1/8192" = 0.0244140625'
 14. 1/16384" = 0.01220703125'
 15. 1/32768" = 0.006103515625'
 16. 1/65536" = 0.0030517578125'
 17. 1/131072" = 0.00152587890625'
 18. 1/262144" = 0.000762939453125'
 19. 1/524288" = 0.0003814697265625'
 20. 1/1048576" = 0.00019073486328125'

6. 1/16" = 3.125'
 7. 1/32" = 1.5625'
 8. 1/64" = 0.78125'
 9. 1/128" = 0.390625'
 10. 1/256" = 0.1953125'
 11. 1/512" = 0.09765625'
 12. 1/1024" = 0.048828125'
 13. 1/2048" = 0.0244140625'
 14. 1/4096" = 0.01220703125'
 15. 1/8192" = 0.006103515625'
 16. 1/16384" = 0.0030517578125'
 17. 1/32768" = 0.00152587890625'
 18. 1/65536" = 0.000762939453125'
 19. 1/131072" = 0.0003814697265625'
 20. 1/262144" = 0.00019073486328125'

Notes:
 All data from Morrison Knudsen
 Engineers (1984)



Prepared for:
 Program Manager's Office for
 Rocky Mountain Arsenal Cleanup

FIGURE 35A-15-3
 Benzene Plume and Water Bearing
 Zones A and B
 Rocky Mountain Arsenal
 Prepared by:
 Ebasco Services Incorporated

NOTE: Vertical dimension in feet *mal.*